

# Tire Sustainability Campaign Residential Survey Findings

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**Submitted by:**

The Applied Management & Planning Group

Gomez Research

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## EXECUTIVE SUMMARY

In 2006, the California Integrated Waste Management Board (CIWMB) initiated a Tire Sustainability Campaign in San Francisco and Fresno Counties to increase proper tire maintenance and disposal. The campaign promotes regular tire maintenance, the purchase of long-lasting tires, proper tire disposal, and other waste reduction practices among residents. The program was initiated as part of a larger effort to meet tire waste mandates established by the California Recycling Act of 1989 and Senate Bill 876 in 2000.

To evaluate the effectiveness of the campaign and to guide the development of the program, the Applied Management & Planning Group (AMPG) and Gomez Research were contracted to conduct a residential survey prior to the launch of the campaign and again two years later. The purpose of the survey was to measure changes in residents' attitudes and behaviors over time. The following report presents findings from the 2008 survey and compares results with baseline measures collected in 2006.

In 2008, a total of 602 residential surveys were conducted, yielding an overall margin of error of +/-4 percent at the 95 percent confidence level. A total of 200 surveys were conducted with English-speaking residents, 201 with Spanish-speaking residents, and 201 with Cantonese-speaking residents, yielding a margin of error of +/-7 percent for each language group. The sample was evenly divided between San Francisco and Fresno Counties and between men and women. All differences presented below are statistically significant at the .05 level unless otherwise noted.

## Key Findings

### Awareness of Tire Maintenance Practices

- **In 2008, there was a significant increase in the proportion of California residents who were aware that inflating their tires can extend tire life. Overall gains were driven by increased awareness among Spanish-speaking and Cantonese-speaking residents.**
- A total of 94 percent of all residents surveyed in 2008 were aware that proper tire inflation increases the life of their tires, up 3-percentage points since 2006, a slight but statistically significant gain (prompted and unprompted awareness combined).<sup>1</sup> There were no statistically significant changes in total awareness for tire rotation or maintaining a car's alignment among the population as a whole. Total awareness for tire rotation and alignment remains high at 92 percent and 89 percent, respectively.
- In 2008, Spanish-speaking respondents were more aware that proper tire inflation increases the life of their tires. When asked how they could extend the life of their tires, 84 percent of Spanish-speaking respondents mentioned tire inflation in 2008, an increase

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<sup>1</sup> Respondents were first asked what practices they were aware of that could increase tire life (unprompted awareness). Next, respondents who did not identify tire inflation, tire rotation, or alignment were asked directly if they were aware of these practices (prompted). Total awareness is a combination of unprompted and prompted awareness.

of 12-percentage points since 2006. There were no changes in awareness among Spanish-speaking respondents regarding rotation or alignment.

- Among Cantonese-speaking respondents, 92 percent identified tire inflation as important for extending tire life, up 23-percentage points since 2006. There was also a significant increase in the proportion of Cantonese-speaking respondents who identified tire rotation when asked what tire maintenance practices they were aware of: 68 percent in 2008, up from 49 percent in 2006.
- Among English-speaking residents, awareness levels for tire inflation, rotation, and alignment were statistically unchanged from 2006.

### **Priorities among California Residents**

- **California residents were less concerned about the environment and more concerned about fuel efficiency and extending the life of their tires in 2008 compared to 2006.**
- There was a statistically significant decrease in the proportion of respondents overall and among English- and Cantonese-speaking groups in particular who rated the environment as “very important” in 2008 compared to 2006. A corresponding increase was observed in the proportion of respondents who identified fuel economy and long-lasting tires as “very important.”
- There were no changes in priorities of Spanish-language respondents, with more than 9 out of every 10 Spanish-speaking residents continuing to rate the environment, fuel economy, long-lasting tires and safety as “very important.”
- Respondents overall and within each language, continue to rate tire safety as the most important benefit of proper tire maintenance at levels consistent with 2006.

### **Awareness of the Benefits of Tire Maintenance**

- **Findings suggest that the campaign has been effective in increasing awareness for the fuel economy benefits of proper tire maintenance—one of the top priorities for California residents—but has not been as effective in raising awareness for the safety benefits or the ways in which proper maintenance can help tires last longer.**
- There was a 9-percentage point increase in the proportion of California residents who identified fuel economy as a benefit of proper maintenance. The overall increase was driven by significant increases among Spanish- and Cantonese-speaking respondents. Awareness of fuel economy as a benefit among English-speaking respondents was unchanged compared to 2006. Fewer respondents identified tire maintenance as being “good for the environment” in 2008 compared to 2006, corresponding to their decreased interest in the environment as a priority.

- Fewer respondents in 2008 identified increased tire life as a benefit of proper maintenance, down 10-percentage points since 2006. The decline was driven by decreases among English- and Cantonese-speaking respondents. There was no change among Spanish-speaking respondents.
- There was no statistical change in the proportion of residents overall who identified safety as a benefit of tire maintenance, or among English-speaking and Spanish-speaking respondents. There was, however, an 11-point increase in the proportion of Cantonese-speaking respondents who reported that a benefit of properly maintaining tires was safety (88 percent in 2008, compared to 77 percent in 2006).

### **How Frequently Residents Check Tire Inflation**

- **There was a significant increase in the proportion of California residents who reported checking their tire inflation regularly.**
- In 2008, 56 percent of respondents reported that they check their tires at least once a month, compared to 45 percent in 2006, an increase of 11-percentage points.
- The overall change was driven by increased compliance among English- and Cantonese-speaking respondents.
- Spanish-speaking residents continue to be more likely to check their tire inflation regularly compared to all other groups, although results for Spanish-speaking respondents were statistically unchanged compared to 2006.

### **How Frequently Residents Rotate Tires**

- **There was no significant increase in the proportion of California residents who rotate their tires regularly; however, significant gains were made among Cantonese-speaking residents in this area.**
- Overall, 61 percent of residents surveyed reported that they rotate their tires every 8,000 miles or once a year, statistically unchanged from 2006.
- In 2008, 56 percent of Cantonese-speaking respondents reported that they rotate their tires every 8,000 miles or every 12 months, compared to 42 percent of respondents in 2006, a 14-percentage point increase.
- Results for English- and Spanish-speaking respondents were similar to findings from 2006.

### **Impact of Tire Retailer Program**

- **There was a significant increase in the proportion of California residents who reported receiving materials on tire maintenance from their tire retailer overall and among English-speaking respondents in 2008 compared to 2006.**
- Among those respondents who purchased tires, 58 percent had received tire maintenance materials from the retailer at the point of purchase, a gain of 8-percentage points since 2006. There were no statistically significant changes among Spanish-speaking and Cantonese-speaking respondents.
- **California residents who had received information from their tire retailer were statistically more likely to report that they check their tire inflation on a regular basis than were other respondents.** A total of 62 percent of respondents who received the information reported that they checked the inflation on their tires at least once a month, compared to 53 percent among those who did not receive the information.

### **Impact of Public Education and Outreach**

- **Just under one-third of all residents surveyed (30 percent) recalled seeing or hearing information on tire maintenance and disposal, unchanged from 2006; however, significant gains were made in outreach to the Cantonese-speaking community.**
- In 2008, 22 percent of Cantonese-speaking respondents reported that they had seen or heard advertising, public information, or news stories about tire maintenance and disposal, up from 9 percent in 2006—a 13-percentage point increase. Recall remained highest among Spanish-speaking respondents, with more than four out of every 10 Spanish-speaking residents reporting that they recalled seeing or hearing information on tire maintenance and disposal. There was no change in the proportion of English-speaking respondents who recalled seeing or hearing similar information.
- **California residents who were exposed to public service announcements or news stories regarding tire maintenance and disposal were statistically more likely to report that they check their tire inflation on a regular basis.** A total of 63 percent of respondents who received the information reported that they checked their tire inflation at least once a month, compared to 53 percent among those who did not recall the advertisements or stories.

### **Perceived Risk of Discarded Tires on the Environment**

- **Although California residents were less concerned about the environment in 2008 compared to 2006, they continue to recognize the significant risks waste tires pose to the environment. Gains in awareness were observed among Spanish-speaking residents.**
- More than eight-out-of-ten California residents recognize discarded tires as posing a significant risk to the environment, with an increased proportion of Spanish-speaking respondents rating the environmental impact as significant in 2008 compared to 2006. In 2008, a total of 95 percent of Spanish-speaking respondents reported that discarded tires pose “a significant risk” to the environment, compared to 88 percent of respondents who gave the same rating in 2006. There were no changes among English- or Cantonese-speaking respondents.

### **Where Residents Check and Inflate Their Tires**

- Two-thirds of all California residents overall and within each language grouping usually check their tire inflation at a private residence (36 percent overall) or gas station (32 percent overall), followed by 15 percent who go to an auto repair shop or mechanic.
- Less than 10 percent of all residents check their tire inflation at a car dealership or tire retailer.
- Cantonese-speaking respondents were more likely than other groups to have their tire inflation checked at an auto repair shop or by their mechanic (25 percent, compared to 14 percent among English-speaking respondents, and 12 percent among Spanish-speaking respondents).
- Spanish-Speaking respondents were more likely to go to a tire retailer to check their tire inflation (15 percent, compared to 6 percent among English-speaking respondents and 2 percent among Cantonese-speaking respondents).
- English-speaking respondents are more likely to have their inflation checked at a car dealership than were other groups (11 percent, compared to 1 percent of Spanish-speaking respondents and 2 percent of Cantonese-speaking respondents).
- More than half of California residents inflate their tires at gas stations (53 percent) followed by less than one-quarter (21 percent) who do so at a private residence. English-speaking respondents were more likely to inflate their tires at a private residence than were other groups. Cantonese-speaking respondents were more likely to go to an auto repair shop or mechanic, and Spanish-speaking respondents were more likely to go to a tire retailer.

## Conclusions and Recommendations

Study findings suggest that the Tire Sustainability Campaign has been effective in changing tire maintenance behavior among California residents. In 2008, a greater proportion of California residents reported checking their tire inflation regularly compared to 2006, and significant gains were made among Cantonese-speaking residents with regard to tire rotation practices. Outreach through tire retailers has proven particularly effective in reaching English-speaking residents. There was a statistically significant increase in the proportion of residents overall who reported receiving information on tire maintenance from their tire retailer and those who received the information were statistically more likely to check their tire inflation regularly. Residents exposed to public service announcements or news stories regarding tire maintenance and disposal were also more likely to report that they check their tire inflation on a regular basis.

The overall change in tire-inflation practices was driven by increased compliance among English- and, to a greater extent, Cantonese-speaking respondents. There was no change in behavior among Spanish-speaking residents, which is likely due to their already high compliance levels in 2006. Spanish-speaking residents continue to be more likely to check their tire inflation regularly compared to all other groups and it remains challenging to convert the last quartile of residents who have resisted earlier efforts to change their behavior.

While California residents continue to recognize the significant risks waste tires pose to the environment, concerns over fuel efficiency are quickly becoming a priority for most residents, second only to passenger safety.

Based on these findings, we recommend the following strategies to continue to increase proper tire maintenance practices.

**Recommendation 1: Continue to build on the success of the tire retailer program by expanding the proportion of materials available in Spanish and Cantonese.** Although some of the information distributed through tire retailers was available in Spanish and Chinese, English-speaking respondents were more likely to report that they had received such information. Among English-speaking respondents who had purchased tires, 69 percent had received tire maintenance materials from the retailer at the point of purchase, a gain of 12-percentage points since 2006. In contrast, there were no statistically significant gains among Spanish-speaking and Cantonese-speaking respondents.

**Recommendation 2: Continue to expand the distribution of tire maintenance information to mechanics and dealerships in addition to tire retailers.** Almost one-third of residents surveyed reported that they had not made a tire purchase in the last two years. Moreover, English-speaking respondents were more likely than non-English speaking respondents (Spanish and Cantonese combined) to report that they had *never* purchased tires for their car, van, or truck. Given the success of the tire retailer program, these findings point to the possible value of expanding outreach at other venues. Although the campaign included outreach through mechanics and dealerships, these efforts were limited.

**Recommendation 3: Continue to emphasize safety and the economic benefits of proper tire maintenance, particularly improved gas mileage, in general outreach materials.** Residents continue to rate tire safety as their number one priority and fuel economy is becoming increasingly important for most residents. Nevertheless, when asked to name all benefits of proper tire maintenance, only 57 percent of residents surveyed identified safety and 39 percent identified fuel economy as a benefit.

**Recommendation 4: In expanding outreach to Spanish-speaking residents, focus on the safety benefits of proper tire maintenance.** When asked why they do not inflate or rotate their tires on a regular basis, Spanish-speaking respondents were most likely to report that they lacked the time or had no need to do so, implying that they are not sufficiently motivated to change their behavior. Spanish-speaking respondents consistently rate passenger safety as “very important” and yet there has been no statistical change in the proportion of Spanish-speaking respondents who identified safety as a benefit of tire maintenance. This finding suggests that Spanish-speaking residents (along with California residents as a whole) are not making the connection between tire maintenance and improved safety for themselves and their families.

## INTRODUCTION

California generates over 41 million reusable and waste tires each year. An estimated 1.5 million waste tires already exist statewide, presenting significant health and environmental risks. As part of an effort to reduce tire waste, the California Integrated Waste Management Board (CIWMB) initiated a public education campaign in 2006 to increase proper tire maintenance and disposal. The Tire Sustainability Campaign, currently being piloted in San Francisco and Fresno Counties, promotes regular tire maintenance as a means of waste reduction. The program was initiated as part of a larger effort to meet tire waste mandates established by the California Recycling Act of 1989 and Senate Bill 876 in 2000.

To help evaluate the impact of the Tire Sustainability Campaign on waste reduction in San Francisco and Fresno Counties, a telephone survey was designed to measure increases in: (1) the proportion of residents aware of proper tire maintenance practices and benefits; and (2) the proportion of residents who regularly maintain their tires or otherwise reduce tire waste. The following report presents post-campaign survey findings, collected two years after the launch of the campaign effort. These findings are compared to baseline findings from 2006 to measure changes in awareness and behavior over time.

It should be noted that the residential survey, like all surveys, has self-reporting bias and should be used in conjunction with results from County and State waste reports to determine the extent to which residents are participating in waste reduction activities. Survey research depends on respondents providing truthful and accurate reports of their activities.

The remainder of this report presents the survey methodology and findings that emerged from the data analyses, and is organized as follows:

- The **Methodology** section, which describes data collection and statistical methods;
- The **Findings** section, documenting attitudes regarding tire maintenance, tire maintenance participation rates, and variations by demographics;
- **Conclusions and Recommendations**; and,
- The **Appendices**, which include the survey instrument with frequencies and open-ended responses.

## METHODOLOGY

A total of 602 residential surveys were conducted, yielding an overall margin of error of +/-4 percent at the 95 percent confidence level. A total of 200 surveys were conducted with English-speaking residents, 201 with Spanish-speaking residents, and 201 with Cantonese-speaking residents, yielding a margin of error of +/-7 percent for each language group. The sample was evenly divided between San Francisco and Fresno counties and between men and women.

Telephone numbers were generated using both random-digit-dialing and random listed sample. For the English-language interviews, telephone prefixes for selected zip codes were identified, and the remaining four digits were randomly generated. The random-digit-dialing sample was augmented with a random listed sample for the Spanish and Cantonese interviews, based on surname and geographic location. Screening questions were used to exclude individuals who did

not own or lease a car, van, or truck, or did not use their vehicle at least three times a week. All respondents were 18 years or older.

The surveys were conducted between April 28 and May 9, 2008 using a computer-assisted telephone interview (CATI) system, in which interviewers read questions from a computer screen and type respondents' answers directly into a database. One third of the surveys were conducted in English, one-third in Spanish, and one-third in Cantonese.

Chi Square, ANOVA, and difference in proportion tests were conducted for all comparative analyses to identify whether observed differences among groups or categories were statistically significant.<sup>2</sup> All reported differences were statistically significant at the 95 percent confidence level unless otherwise noted.

For a copy of the survey, including frequencies, see **Appendix A**.

## **Weighting**

When all surveys were combined, weights were applied to ensure that completed surveys in English, Spanish, and Cantonese were proportional to the actual number of people in the targeted market who speak those languages. Specifically, the expansion factor applied to each language is  $N/n$ , where  $N$  is the total number of residents in the actual population who speak a given language in a given county, and  $n$  is the number of completed surveys for that language. Once numbers were expanded to represent the actual population, they were weighted back down to the sample size by dividing the expanded total by  $N/n$ , where  $N$  is the total number of all targeted residents, and  $n$  is the total number of residents surveyed. Weighting factors were applied only when findings were presented for respondents overall. U.S. Census data were used to determine the total number of residents who speak each language in the targeted markets.

## **Report Organization**

This report has been organized around the following topical areas:

- Profile of Residents Surveyed;
- Awareness of Practices that Extend Tire Life;
- Perceived Benefits of Properly Maintaining Tires;
- Perceived Risk of Discarded Tires on the Environment;
- How Frequently Residents Check Tire Inflation;
- How Frequently Residents Rotate Tires;
- Reasons for Not Properly Maintaining Tires;
- Impact of Retailer Programs; and,
- Impact of Public Education and Outreach.

The next section of this report presents study findings.

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<sup>2</sup> A statistically significant difference means that the difference among groups is not by chance, and that a real difference exists among groups.

## FINDINGS

The following section presents a demographic profile of respondents surveyed in 2008, followed by detailed findings regarding residents' awareness of proper tire maintenance practices and their compliance with those standards.

### **Profile of Residents Surveyed**

The demographic profile of respondents surveyed in 2008 was compared to those surveyed in 2006 to identify any significant changes in the composition of the sample that might influence survey results. No significant differences in the demographic profile of respondents were identified to suggest that the 2008 and 2006 samples were not comparable.

**Table 1**, which presents the ethnic distribution of households surveyed in 2008 and 2006, indicates few changes in the ethnic composition of the sample. Approximately one-third of the residents surveyed identified themselves as Hispanic/Latino (38 percent), one-third as Asian (37 percent), and just under one-quarter Caucasian (22 percent). A total of 1 percent of respondents identified themselves as African-American in 2008, similar to findings from 2006. Although representation of African-Americans in the sample appears low, African-Americans make-up only 6 percent of all residents in Fresno County and 8 percent of all residents in San Francisco County, which explains their low occurrence in the random sample (U.S. Census Bureau State and County QuickFacts).

**Table 1: Ethnic Distribution of Households Sampled  
All Respondents, Unweighted 2006 and 2008**

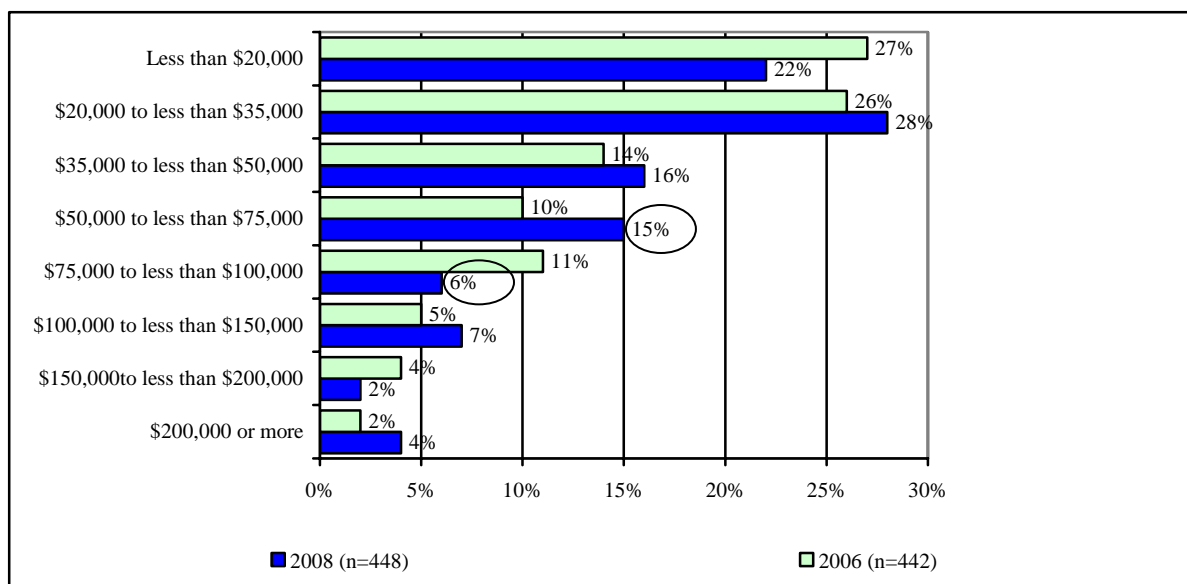
	Hispanic/ Latino	African- American	Asian	Caucasian	Other	Refused
2006 (n=601)	37%	2%	36%	22%	<1%	3%
2008 (n=602)	38%	1%	37%	20%	<1%	3%

\*Table based on: Q21: "Would you please tell me what ethnic group you identify with? Are you Hispanic/Latino, Black/African American, Asian, Caucasian, or of some other ethnic or racial background?"

As seen in **Figure 1** on the following page, two-thirds of the households surveyed in 2008 had incomes below the median household income for California (\$50,000), similar to findings from 2006. This skew in the data toward lower income groups reflects the low median income for households in Fresno County, projected at \$36,000 (U.S. Census Bureau State and County QuickFacts, compiled 2003).

While there was no change in the proportion of respondents with incomes above and below median, there was a 5-percentage point increase in the proportion of respondents reporting incomes between \$50,000 and \$75,000 and a corresponding decrease in the proportion reporting incomes between \$75,000 and \$100,000.

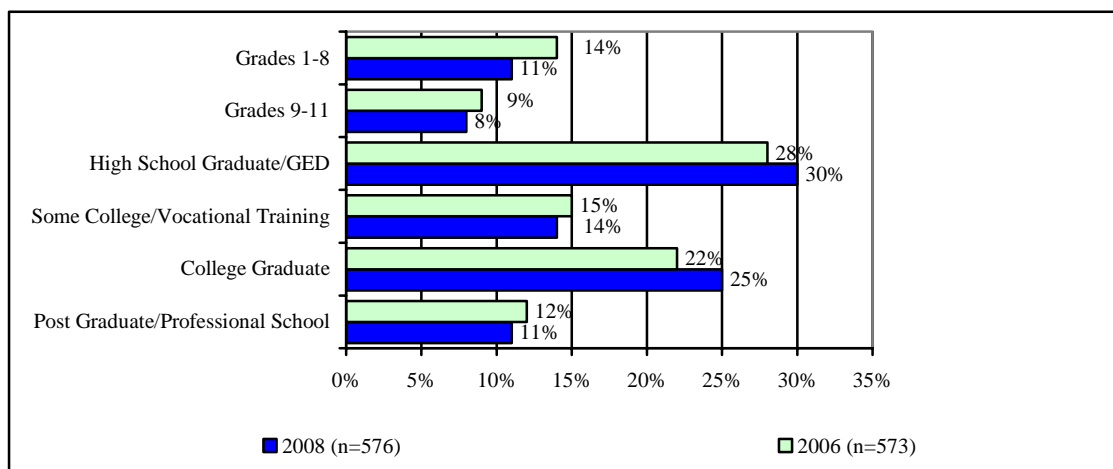
**Figure 1: Income Distribution of Households Sampled  
All Respondents, Unweighted, 2006 and 2008**



\*Significant differences at the 95% level are circled. Chart based on Q22: "I am going to read some categories of household income. Please stop me when I reach the category of your total 2007 annual household income, before taxes." Base excludes respondents who answered "don't know/refused."

**Figure 2** presents the educational level of respondents. Similar to findings for 2006, the highest level of education for half the households surveyed in 2008 was a high school diploma. A total of 14 percent reported having some college or vocational training, and one-third (36 percent) reported have a college or post-graduate degree.

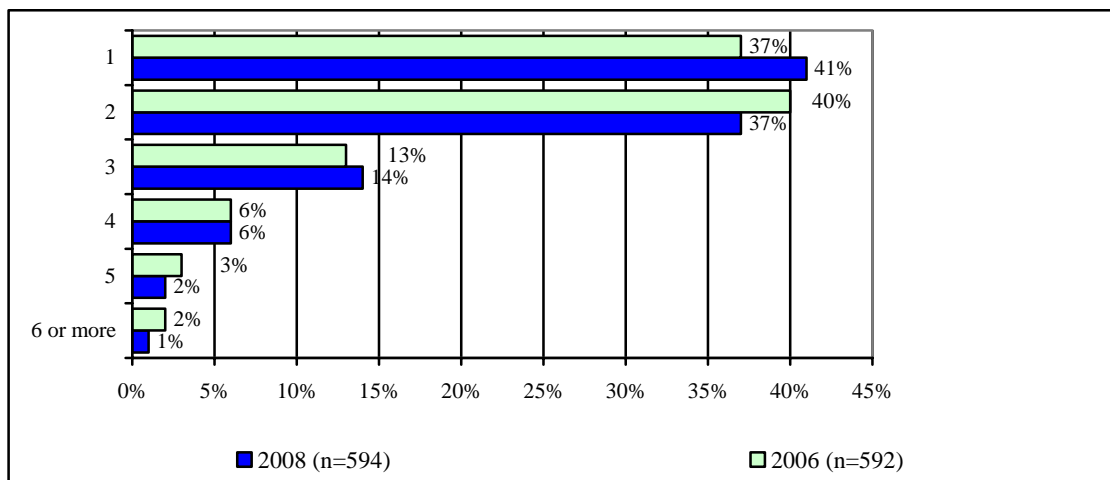
**Figure 2: Educational Level of Households Sampled  
All Respondents, Unweighted, 2006 and 2008**



\*This chart is based on Q20: "What is the highest level of school completed by anyone living in your household?" Base excludes respondents who answered "don't know/refused."

More than three-fourths (78 percent) of the households surveyed in 2008 reported having one or two vehicles, statistically unchanged from 2006. See **Figure 3**.

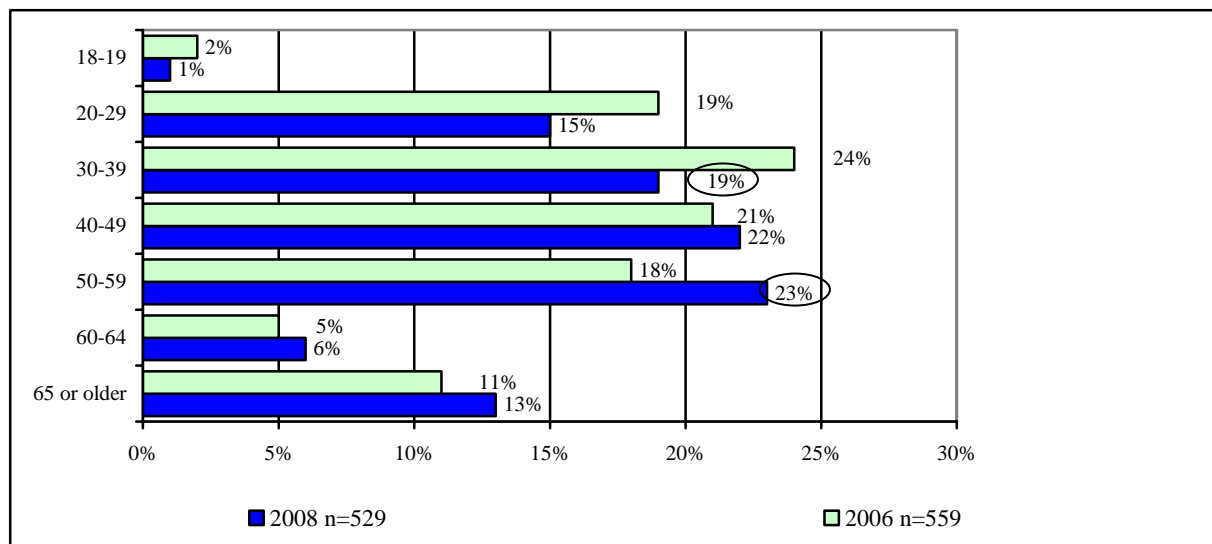
**Figure 3: Number of Vehicles Owned or Leased, Households Sampled  
All Respondents, Unweighted, 2006 and 2008**



\*Chart is based on Q18: "How many vehicles does your household currently own or lease?" Base excludes "don't know/refused."

**Figure 4** presents the age distribution among respondents in 2008 and 2006. In 2008, respondents were slightly older, with a decrease in the proportion of 30-year-olds and an increase in the proportion of 50-year-olds.

**Figure 4: Age of Respondents Sampled  
All Respondents, Unweighted, 2006 and 2008**



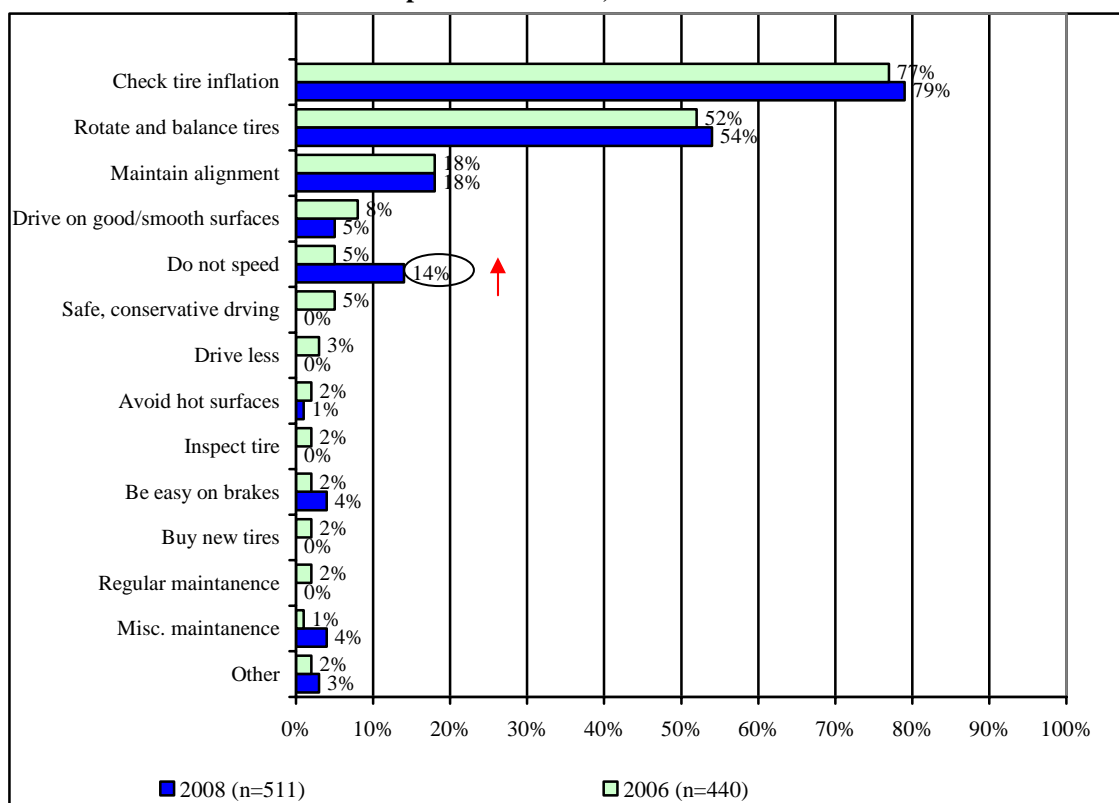
\*Chart is based on Q19: "What year were you born?" Base excludes "don't know/refused."

## Awareness of Practices that Extend Tire Life

A key objective of the Tire Sustainability Campaign was to increase the proportion of residents who regularly maintain their tires, thereby extending tire life and reducing waste. In order to practice responsible tire maintenance, residents need to know what constitutes proper tire maintenance and they need to be sufficiently motivated to act on that information.

To gauge the proportion of residents who are currently aware of proper tire maintenance practices, respondents were first asked what activities they were aware of that could increase the life of their tires (unprompted awareness). Results are presented in **Figure 5**. When asked what tire maintenance practices they were aware of, more than three-quarters (79 percent) of all residents surveyed identified the need to check tire inflation, and more than half (54 percent) identified the need to rotate tires. While this upward trend in unprompted awareness was not statistically significant, the pattern was echoed in statistically significant increases among Spanish-speaking and Cantonese-speaking respondents (see **Figure 6** on the following page). As in 2006, less than one in five residents surveyed in 2008 (18 percent) mentioned the need to maintain their cars' alignment. Respondents in 2008 were more aware than they were in 2006 that speeding can affect the life of their tires, 14 percent, up from 5 percent in 2006.

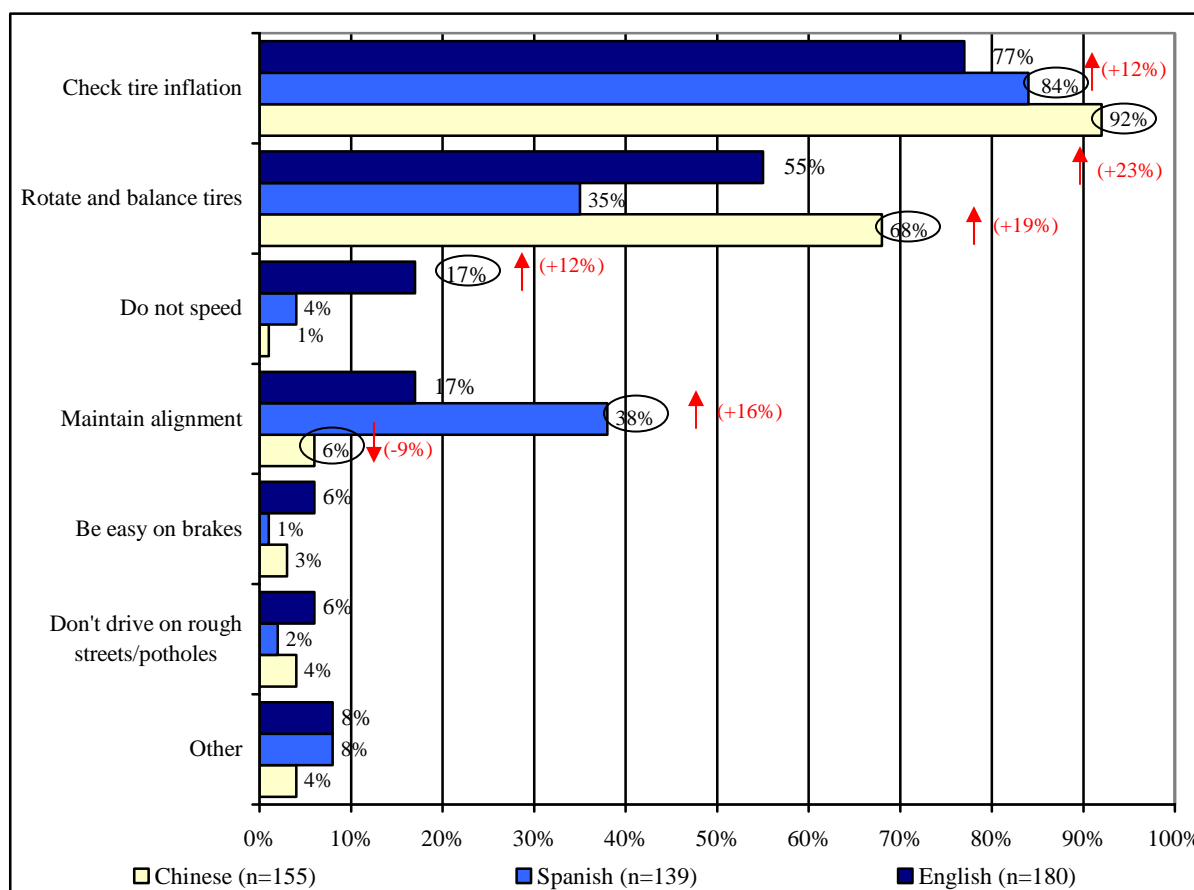
**Figure 5: Awareness of Practices That Extend Tire Life, Unprompted Respondents Overall, 2006 and 2008**



\*Significant differences at the 95% confidence level are circled. Chart is based on Q4: "What practices are you aware of that can increase the life of your tires? Base excludes respondents who answered "don't know/refused."

**Figure 6** presents unprompted awareness for tire maintenance practices broken down by language spoken. **There were significant increases in the proportion of Spanish-speaking and Cantonese-speaking respondents who identified tire inflation when asked how they could extend tire life.** In 2008, 84 percent of Spanish-speaking respondents mentioned tire inflation, compared to 72 percent in 2006. Among Cantonese-speaking respondents, 92 percent identified tire inflation as important for extending tire life, up 23-percentage points since 2006. In addition, a greater proportion of Cantonese-speaking respondents were aware that they need to rotate their tires; 68 percent in 2008, up from 49 percent two years ago. Unprompted awareness among English-speaking residents was unchanged.

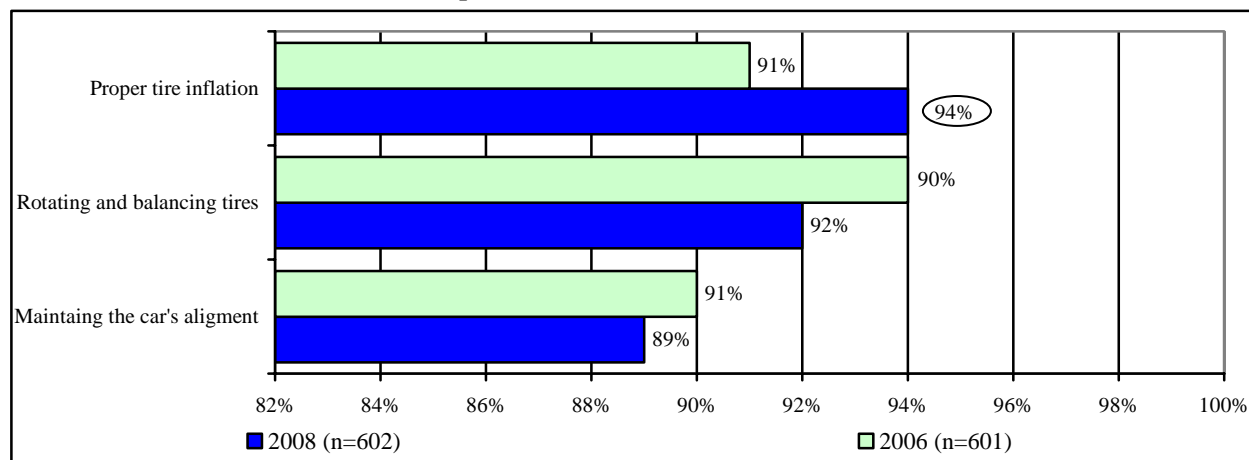
**Figure 6: Awareness of Practices That Extend Tire Life, Unprompted by Language, 2008**



\*Statistically significant differences are circled. Chart is based on Q4: "What practices are you aware of that can increase the life of your tires?" Base excludes respondents who answered "don't know/refused." Statistically significant changes in 2008 compared to 2006 are circled.

Respondents were then asked directly if they were aware of specific tire maintenance practices (prompted). **When prompted and unprompted awareness were combined, a significant increase was found in the proportion of respondents overall who were aware that inflating their tires can extend the life of their tires.** As seen in **Figure 7**, 94 percent of all residents surveyed were aware that proper tire inflation increases the life of their tires, up 3-percentage points since 2006. There were no statistically significant changes in total awareness for tire rotation or maintaining the car's alignment.

**Figure 7: Awareness of Practices That Extend Tire Life, Prompted and Unprompted Combined  
Respondents Overall, 2006 and 2008**



\*Statistically significant differences at the 95% level are circled. Chart is based on Q4: "What practices are you aware of that can increase the life of your tires?" Q5: Before this survey, were you aware that the following practices can help your tires last longer? Base includes all respondents who took the survey.

## Perceived Benefits of Properly Maintaining Tires

To help guide the refinement of campaign messages, respondents were asked what benefits of tire maintenance were most important to them on a scale of one to five, where one is “not at all important,” and five is “very important.” As presented in **Table 2, respondents overall and within each language were less concerned about the environment and more concerned about fuel economy in 2008 compared to 2006.** There was a statistically significant decrease in the proportion of respondents overall and among English-speaking and Cantonese-speaking respondents who rated the environment as a “very important.” A corresponding increase was observed in the proportion of respondents who identified fuel economy and long-lasting tires as “very important.” Although this renewed emphasis on the economic benefits of tire maintenance was not dramatic enough to be statistically significant, it is likely that a true shift in consumer priorities has occurred. **Consistent with findings from 2006, respondents overall and within each language, continue to rate tire safety as more important than the environment, fuel economy, or long lasting tires.**

**Table 2: Respondents Rating Various Benefits of Tire Maintenance as “Very Important”  
Respondents Overall and by Language, 2006 and 2008**

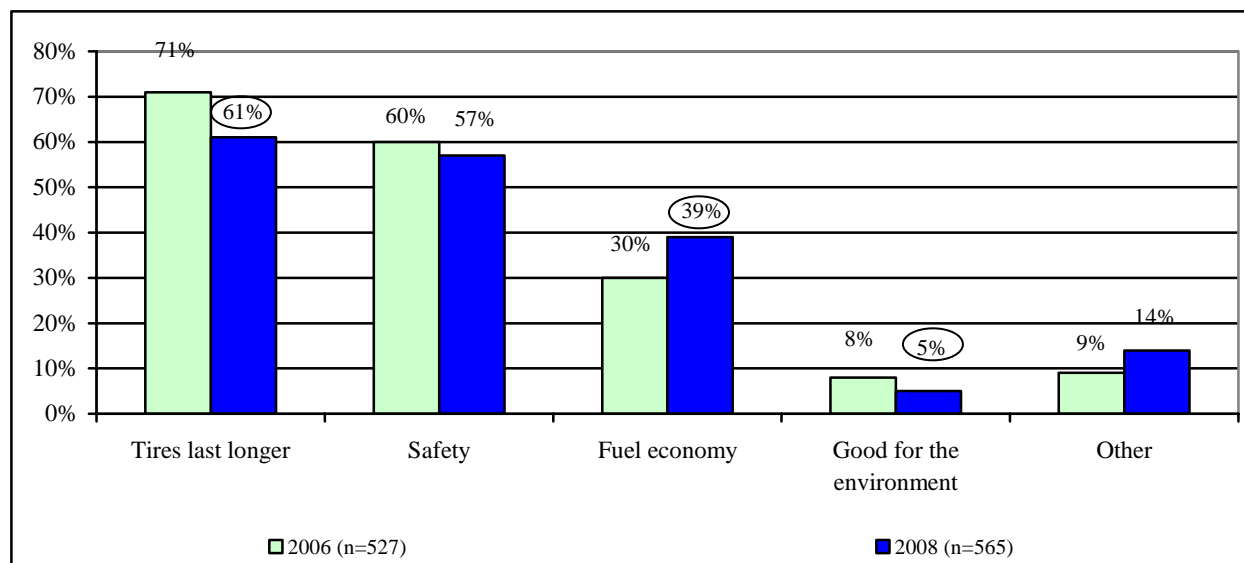
	All Respondents		English-Speaking		Spanish-Speaking		Cantonese-Speaking	
	2006 (n=598)	2008 (n=597)	2006 (n=197)	2008 (n=199)	2006 (n=196)	2008 (n=197)	2006 (n=197)	2008 (n=199)
Tire safety	89%	88%	87%	86%	97%	93%	89%	92%
Fuel economy	75	78	73	79	91	93	68	56
Long-lasting tires	70	74	66	73	89	94	69	62
Environment	77	68	74	62	89	92	77	68

\*Yellow indicates a statistically significant difference at the 95% confidence level. Table is based on Q7: “Using a scale of 1 to 5, where 1 is Not at all Important and 5 is Very Important, please tell me how important each of the following is to you.” Base excludes respondents who answered “don’t know/refused.”

Respondents were asked to identify the benefits of proper tire maintenance. **As seen in Figure 8, the campaign has been effective in increasing awareness for the fuel economy benefits of proper tire maintenance, one of the top priorities of California residents in 2008.** There was a 9-percentage point increase in the proportion of California residents who identified fuel economy as a benefit of proper maintenance in 2008. Fewer respondents identified tire maintenance as being “good for the environment” this year compared to 2006, corresponding to their decreased interest in the environment as a priority. While increasing the life of their tires is important to California residents, fewer respondents in 2008 were aware that properly maintaining tires increases tire life, down 10-percentage points since 2006. There was no statistical change in the proportion of residents who identified safety as a benefit of tire maintenance.

Findings suggest that by linking proper tire maintenance to the benefits that matter most to California residents—namely, safety and cost—the campaign will continue to motivate more residents to check their tires regularly. Environmental protection appears to be less of a motivator this year than it was in 2006, due to renewed concerns regarding the economy and fuel prices.

**Figure 8: Perceived Benefits of Properly Maintaining Tires  
Respondents Overall 2006 and 2008**

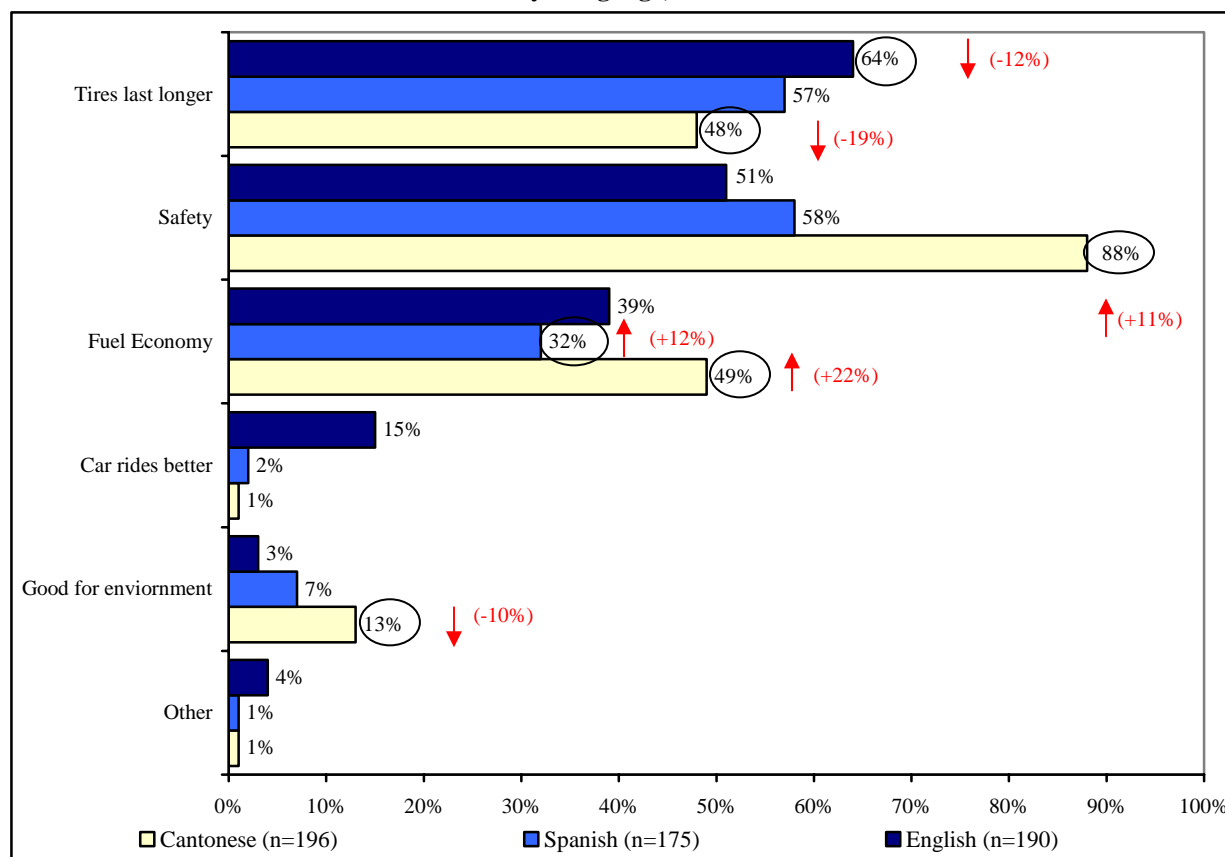


\* Proportions circled are statistically different at the 95% confidence level. Chart based on Q6: “What are the benefits of properly maintaining your tires?” Base excludes respondents who answered “don’t know/refused.”

**Figure 9** presents perceived benefits of tire maintenance by language spoken. In 2008, Spanish- and Cantonese-speaking respondents were more likely to identify fuel economy as a benefit of regular tire maintenance; up 12-percentage points and 22-percentage points, respectively. In addition, fewer Cantonese-speaking respondents identified tire maintenance as being “good for the environment” in 2008 compared to 2006. Decreases among Spanish-speaking and English-speaking respondents regarding the environmental benefits of tire maintenance were not statistically significant.

In addition, fewer English-speaking and Cantonese-speaking respondents were aware that properly maintaining tires increases the life of their tires. In 2008, just under two-thirds of English-speaking respondents (64 percent) were aware that longer-lasting tires was a benefit of proper maintenance, compared to three-fourths (76 percent) in 2006. Similarly, fewer Cantonese-speaking respondents mentioned extending tire life, when asked to name all the benefits of proper tire maintenance they were aware of, 48 percent in 2006 compared to 67 percent in 2008. There were no similar shifts in awareness among Spanish-speaking respondents. There was an 11-point increase in the proportion of Cantonese-speaking respondents who were aware that properly maintaining tires increases passenger safety (88 percent in 2008, compared to 77 percent in 2006). There were no statistical changes in the proportion of English- or Spanish-speaking respondents who identified safety as a benefit of tire maintenance.

**Figure 9: Perceived Benefits of Properly Maintaining Tires  
By Language, 2008**



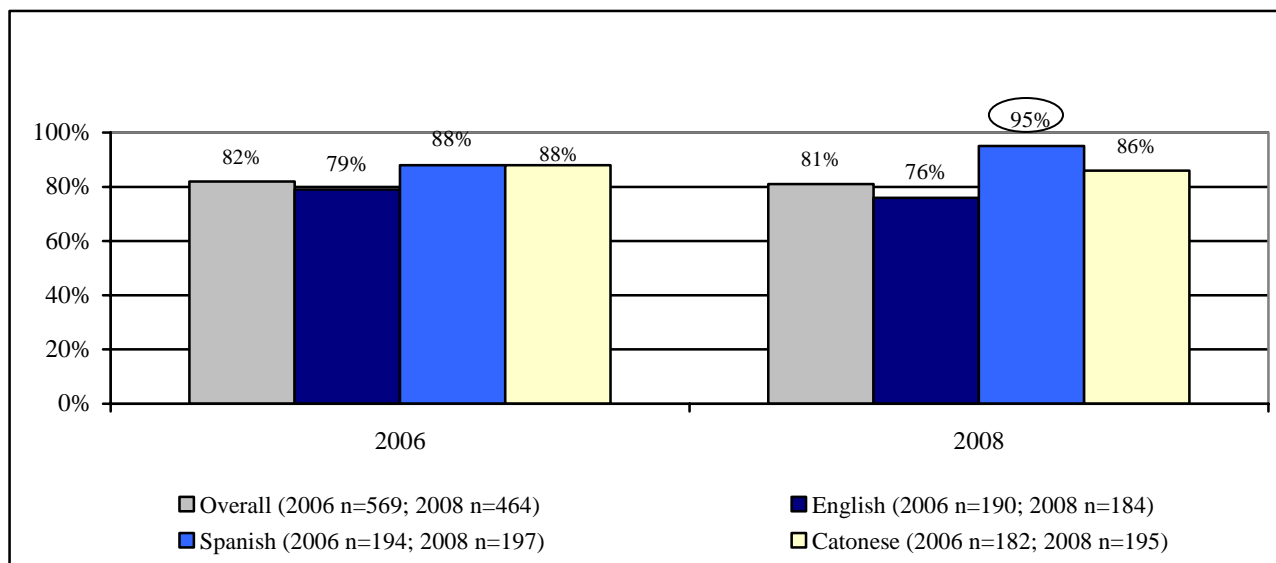
\*Circles indicate a statistically significant difference by language at the 95% confidence level. Chart based on Q6: “What are the benefits of properly maintaining your tires?” Base excludes respondents who answered “don’t know/refused.”

## Perceived Risk of Discarded Tires on the Environment

To further probe the extent to which residents are aware that tire maintenance and disposal affect the environment, the survey asked respondents to rate the risk they believe discarded tires pose to the environment or to public health on a scale of one to five, where one is “no risk” and five is a “significant risk.” **Figure 10** presents the proportion of respondents overall and by each language group who gave a top rating of four or five to describe the environmental impact of waste tires.

**More than eight-out-of-ten California residents recognize discarded tires as posing a significant risk to the environment, with an increased proportion of Spanish-speaking respondents rating the environmental impact as significant in 2008 compared to 2006.** A total of 95 percent of Spanish-speaking respondents reported that discarded tires to pose “a significant risk” to the environment in 2008, compared to 88 percent who gave the same rating in 2006. There were no changes among English- or Cantonese-speaking respondents.

**Figure 10: Proportion of Respondents who Believe Discarded Tires Pose a “Significant Risk” to the Environment (rating of 4 or 5)  
Respondents Overall and by Language, 2006 and 2008**

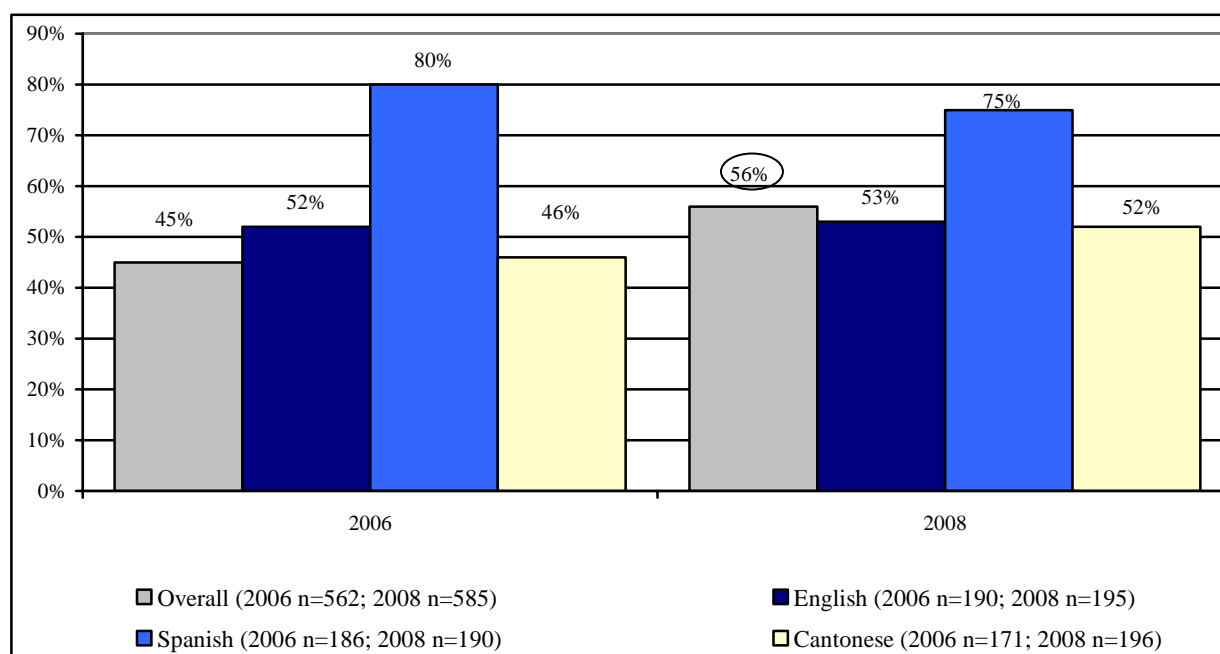


\*Statistically significant differences at the 95% confidence level are circled. Chart based on Q8: “In your opinion, how much of a risk do discarded tires pose to the environment or to public health on a scale of 1 to 5, where 1 is No Risk and 5 is a Significant Risk?” Base excludes respondents who answered “don’t know/refused.”

## How Frequently Residents Check Tire Inflation

In addition to gauging awareness levels, the survey was designed to document tire maintenance practices, against which changes in behavior could be measured over time. **In 2008, there was a significant increase in the proportion of California residents who reported checking their tire inflation regularly.** This year, 56 percent of respondents reported that they check their tires at least once a month, compared to 45 percent in 2006, an increase of 11-percentage points. The overall change was driven by increased compliance among English-speaking and Cantonese-speaking respondents. Spanish-speaking residents continue to be more likely to check their tire inflation regularly compared to all other groups, although results for Spanish-speaking respondents were statistically unchanged compared to 2006. Results are presented in **Figure 11**.

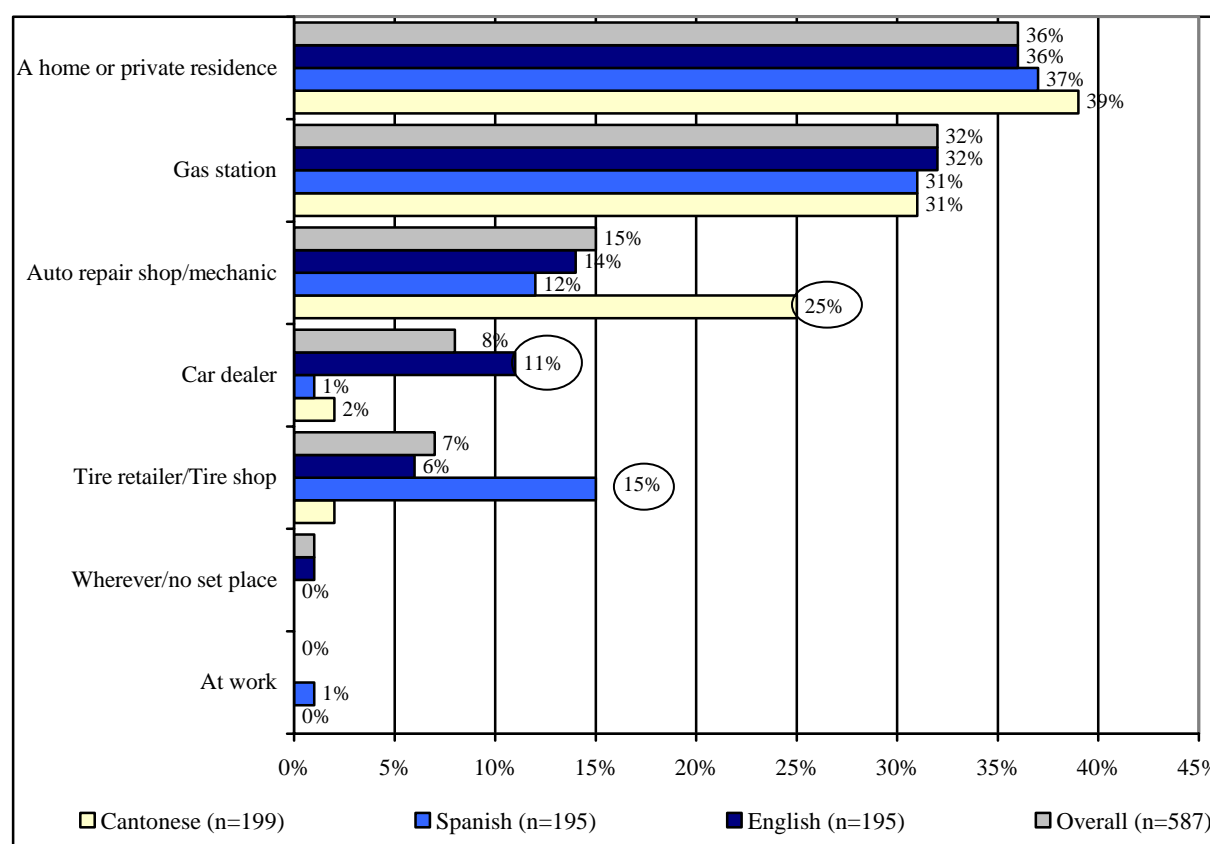
**Figure 11: Check Tire Inflation as Often as Recommended  
Respondents Overall and by Language, 2006 and 2008**



\*Statistically significant differences at the 95 percent confidence level are circled. Chart is based on Q12: "How often do you check the inflation on your tires or have someone else do it?" Base excludes respondents who answered "don't know/refused."

In 2008 two new questions were added to the survey to determine where residents go to check their tire inflation and where they actually inflate the tires. **As seen in Figure 12, two-thirds of all California residents overall and within each language group usually check their tire inflation at a private residence (36 percent overall) or gas station (32 percent overall), followed by 15 percent who go to an auto repair shop or mechanic.** Less than 10 percent of all residents check their tire inflation at a car dealership or tire retailer. While this pattern was generally consistent across language groups, there were differences. Cantonese-speaking respondents are more likely than other groups to have their tire inflation checked at an auto repair shop or by their mechanic (25 percent, compared to 12 percent among English-speaking respondents, and 14 percent among Spanish-speaking respondents). English-speaking respondents are more likely to have their tire inflation checked at a car dealership than are other groups (11 percent, compared to 1 percent of Spanish-speaking respondents and 2 percent of Cantonese-speaking respondents). Spanish-Speaking respondents are more likely to go to a tire retailer to check their tires' inflation (15 percent, compared to 6 percent among English-speaking respondents and 2 percent among Cantonese-speaking respondents).

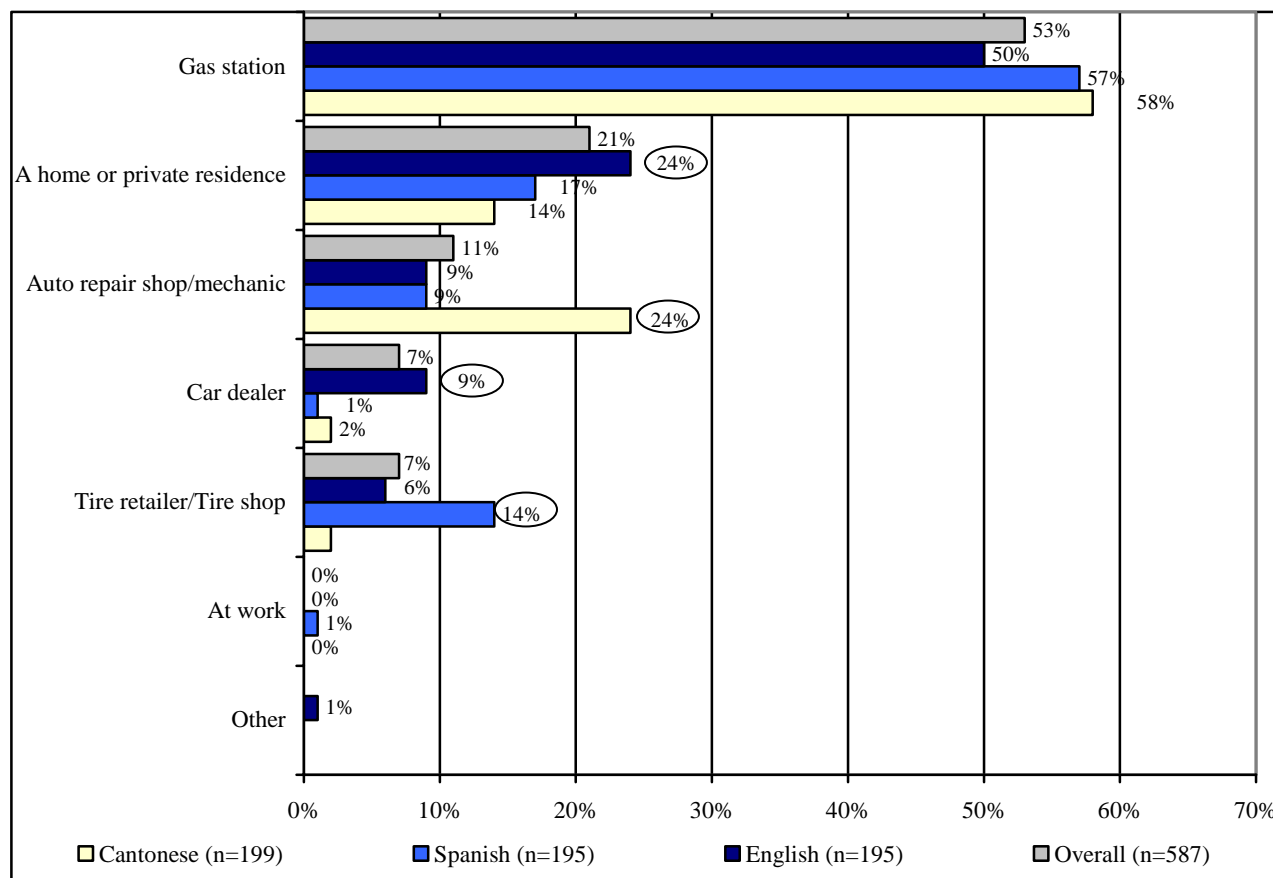
**Figure 12: Where Residents Go to Check Tire Inflation  
Respondents Overall and by Language, 2008**



\*Significant differences between groups at the 95 percent confidence level are circled. Chart is based on Q13a: "Where do you usually go to check the inflation on your tires?" Base includes all respondents asked the question.

As seen in **Figure 13**, more than half of all respondents inflate their tires at gas stations (53 percent) followed by less than one-quarter (21 percent) who do so at a private residence. English-speaking respondents are more likely to inflate their tires at home than were other groups. Cantonese-speaking respondents are more likely to go to an auto repair shop or mechanic, and Spanish-speaking respondents are more likely to go to a tire retailer.

**Figure 13: Where Residents Go to Put Air in Tires  
Respondents Overall and by Language, 2008**

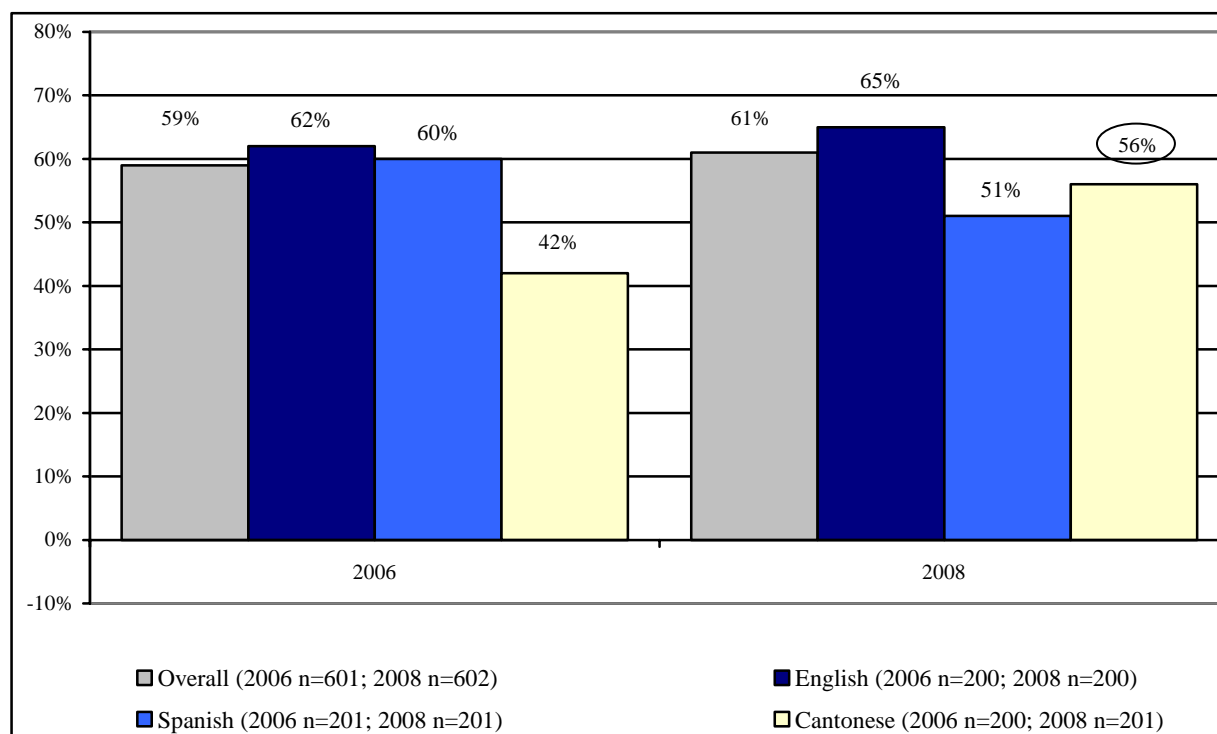


\*Statistically significant differences at the 95 percent confidence level are circled. \*chart is based on Q13b: "Where do you usually go to put air in your tires?" Base includes all respondents asked the question.

## How Frequently Residents Rotate Tires

Overall, 61 percent of all residents surveyed reported that they rotate their tires every 8,000 miles or once a year, statistically unchanged from 2006, as seen in **Figure 14**. **There was, however, a significant increase in the proportion of Cantonese-speaking respondents who reported rotating their tires regularly.** In 2008, 56 percent of Cantonese-speaking respondents reported that they rotate their tires every 8,000 miles or every 12 months, compared to 42 percent in 2006, a 14-percentage point increase. Results for English- and Spanish-speaking respondents were similar to findings from 2006.

**Figure 14: Rotate Tires as Often as Recommended (8,000 miles or 12 months)  
Respondents Overall and by Language, 2006 and 2008**

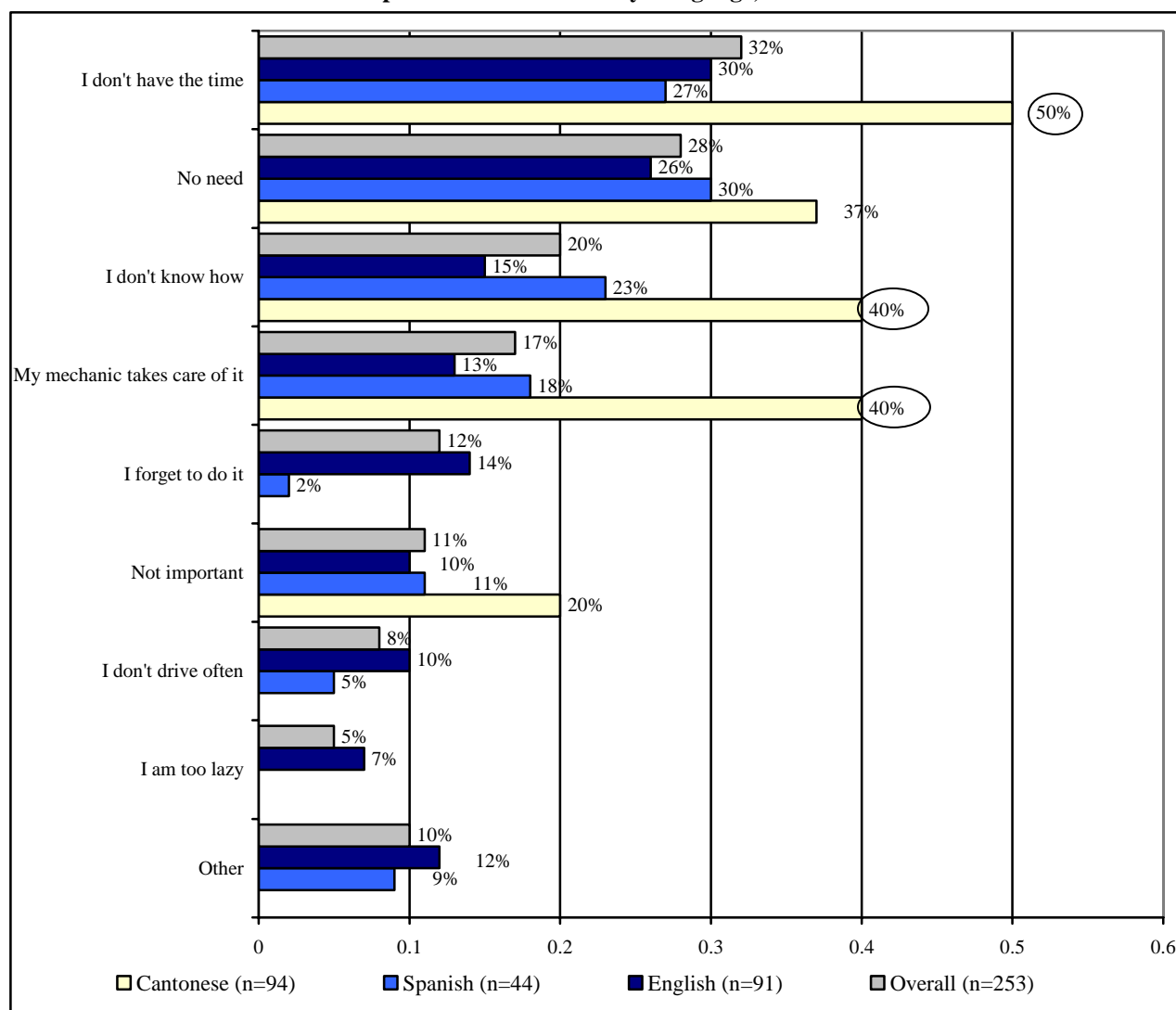


\*Statistically significant differences at the 95 percent confidence level are circled. Chart based on Q14: "How often do have your tires rotated?"  
 Base includes all respondents asked the question.

## Reasons for Not Properly Maintaining Tires

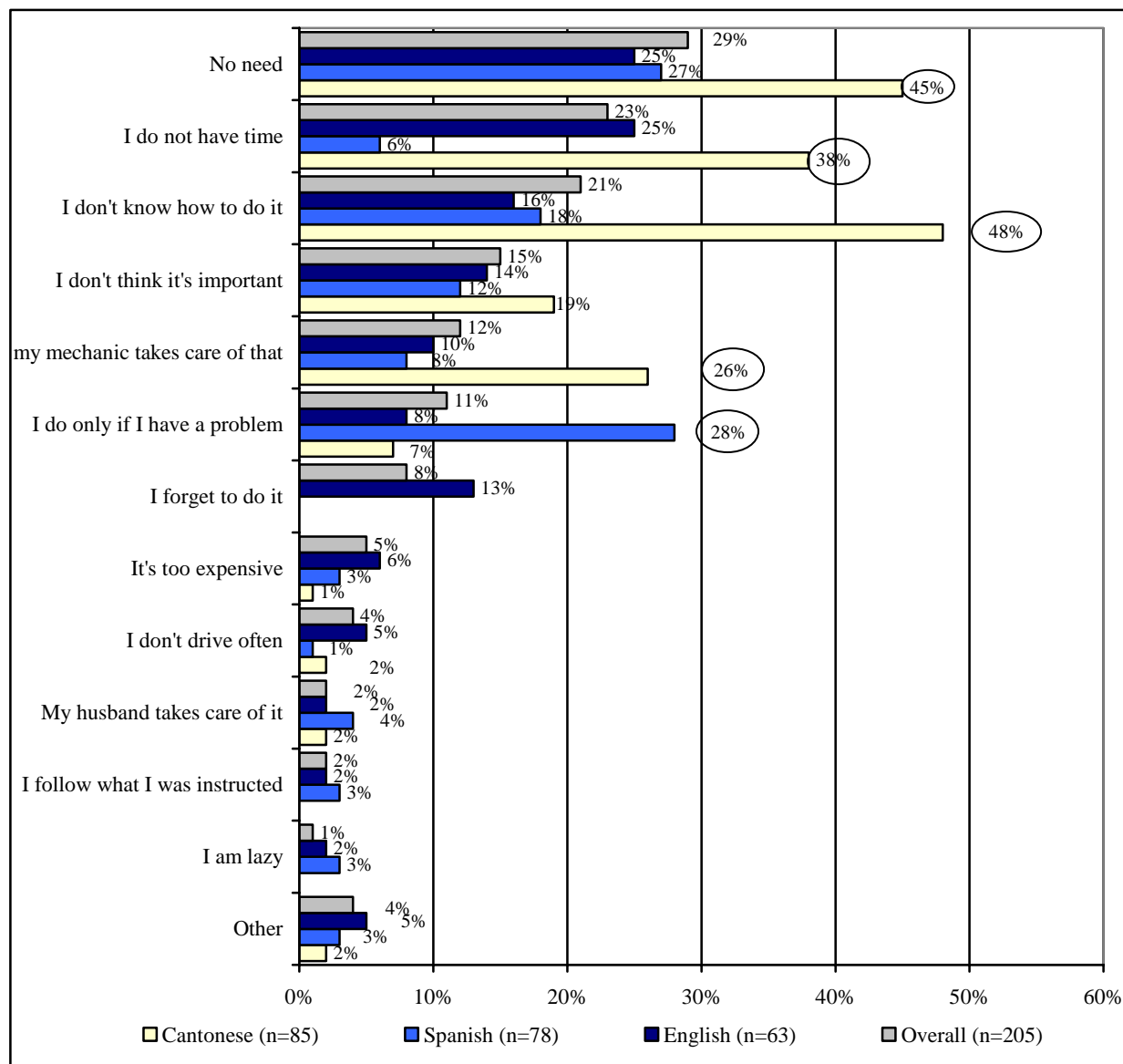
Respondents who reported that they did not regularly check their tire inflation and/or rotate their tires were asked why they do not maintain their tires more consistently. **Among respondents overall, the most frequently cited reasons for not regularly maintaining tires were “lack of time” and “no need,” similar to 2006.** This pattern was largely consistent, regardless of language spoken, with a few exceptions. Cantonese-speaking respondents were more likely than other groups to report that they did not know how to maintain their tires and that their mechanic usually handles tire maintenance, similar to findings from 2006. Cantonese-speaking respondents were also more likely to report that they lack the time and see no need to check their inflation or rotate tires. Spanish-speaking respondents were more likely than other groups to report that they only check their inflation or rotate tires if they have a problem. Results are presented in **Figure 15** and **16** on the following pages.

**Figure 15: Reasons for Not Checking Tire Inflation More Often  
Respondents Overall and by Language, 2008**



\*Statistically significant differences at the 95% level are circled. Chart based on Q13: “What are some of the reasons you do not check your tire inflation more often?” Base includes respondents who reported rotating their tires more than once a month. Base excludes respondents who answered “don’t know/refused.”

**Figure 16: Reasons for Not Rotating Tires More Often  
Respondents Overall and by Language, 2008**



\*Statistically significant differences at the 95% level are circled. Chart based on Q15: "What are some of the reasons you do not rotate your tires more often? Base includes respondents who reported rotating their tires more than every 8,000 miles or 12 months. Base excludes respondents who answered "don't know/refused."

## Impact of Tire Retailer Programs

One strategy for increasing tire life is to conduct outreach with retailers who can provide consumers with information on tire maintenance at the point of purchase. To determine the proportion of retailers providing such materials, respondents were asked when they last purchased tires for their vehicle and whether or not they received materials about caring for their tires.

**As seen in Table 3, more than two-thirds of respondents (69 percent) reported that they had made a tire purchase within the last two years, unchanged from 2006.** English-speaking respondents, however, were more likely than non-English speaking respondents (Spanish and Cantonese combined) to report that they had *never* purchased tires for their car, van, or truck. This finding suggests that more English-speaking residents may own or lease new cars, which may not require tire replacement, and points to the possible value of conducting outreach with mechanics and dealerships, as well tire retailers.

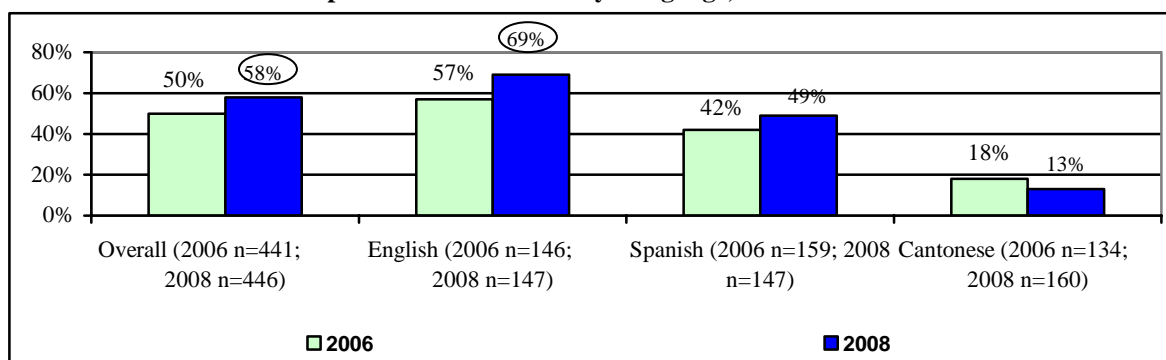
**Table 3: When Tires Were Last Purchased,  
Respondents Overall and by Language, 2008**

	Last month	In the last year	More than a year, less than 2 years	More than 2 years	Never
Overall (n=593)	9%	41%	19%	18%	13%
English (n=199)	10	38	19	19	15
Spanish (n=199)	9	58	13	11	11
Cantonese (n=185)	6	36	27	21	11

\* Table based on Q16: "Did you purchase tires for your car, truck, or van in the ...?" Base excludes respondents who answered "don't know/refused."

Respondents who had purchased tires were asked if the tire retailer provided them with information on tire maintenance. Results are presented in **Figure 17**. **There was a significant increase in the proportion of California residents who reported receiving materials on tire maintenance from their tire retailer overall and among English-speaking respondents.** Among those respondents who purchased tires, 58 percent had received tire maintenance materials from the retailer at the point of purchase, a gain of 8- percentage points since 2006. There were no statistically significant changes among Spanish-speaking and Cantonese-speaking respondents. Although some materials were provided in all three languages, findings suggest that tire retailers were more likely to have tire maintenance information available in English.

**Figure 17: Received Tire Maintenance Information from Retailer at Last Tire Purchase  
Respondents Overall and by Language, 2006 and 2008**



\*Statistically significant differences at the 95% confidence level are circled. Figure based on Q17: "When you last bought tires, did the retailer provide you with information about tire maintenance?" Base includes all respondents who purchased tires.

**California residents who had received the information from their tire retailer were statistically more likely to report that they check their tire inflation on a regular basis, as seen in Table 4.** A total of 62 percent of respondents who received the information reported that they checked the inflation on their tires at least once a month, compared to 53 percent among those who reported that they had not received the information.

**Table 4: Proportion of Respondents Who Check Tire Inflation Regularly by  
Exposure to Materials from Tire Retailer  
Respondents Overall, 2008**

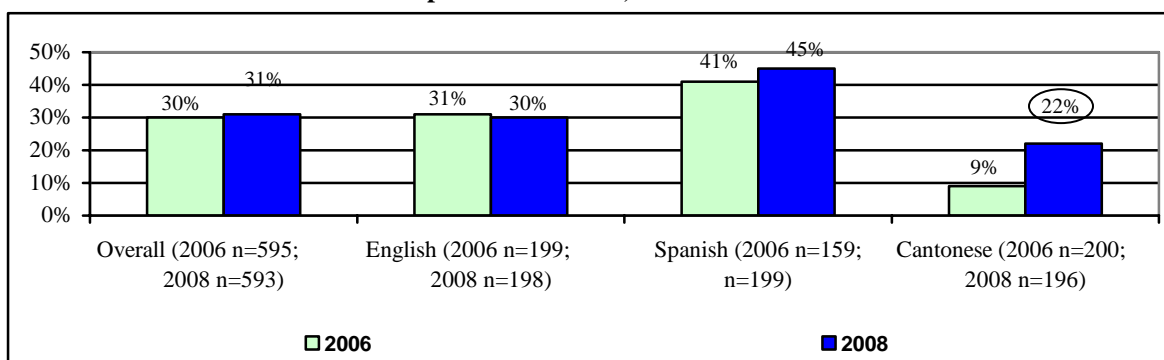
Behavior	Received Information from Retailer	
	Yes	Did not receive inform
Check Tire Inflation at Least Once a Month	62%	53%

\*Statistically significant differences at the 90% confidence level are shaded. \*Figure based on Q17: "When you last bought tires, did the retailer provide you with information about tire maintenance?" and Q12: "How often do you check the inflation on your tires or have someone else do it?" Base includes all respondents who purchased tires.

## Impact of Public Education and Outreach

Another objective of the residential survey was to measure the extent to which residents were exposed to advertising, public information, or news stories about tire maintenance and disposal, and whether they could recall the messages. Results are presented in **Figure 18. Just under one-third of all residents surveyed (30 percent) recalled seeing or hearing information on tire maintenance and disposal, unchanged from 2006; however, significant gains were made in outreach to the Cantonese-speaking community.** In 2008, 22 percent of Cantonese-speaking respondents reported that they had seen or heard advertising, public information, or news stories about tire maintenance in 2008, up from 9 percent in 2006—a 13 percentage-point increase. Recall remained highest among Spanish-speaking respondents, with more than four out of 10 Spanish-speaking residents reporting that they remember information on tire maintenance and disposal.

**Figure 18: Recall Seeing or Hearing Advertising, Public Information or News Stories About Tire Maintenance and Disposal Respondents Overall, 2006 and 2008**



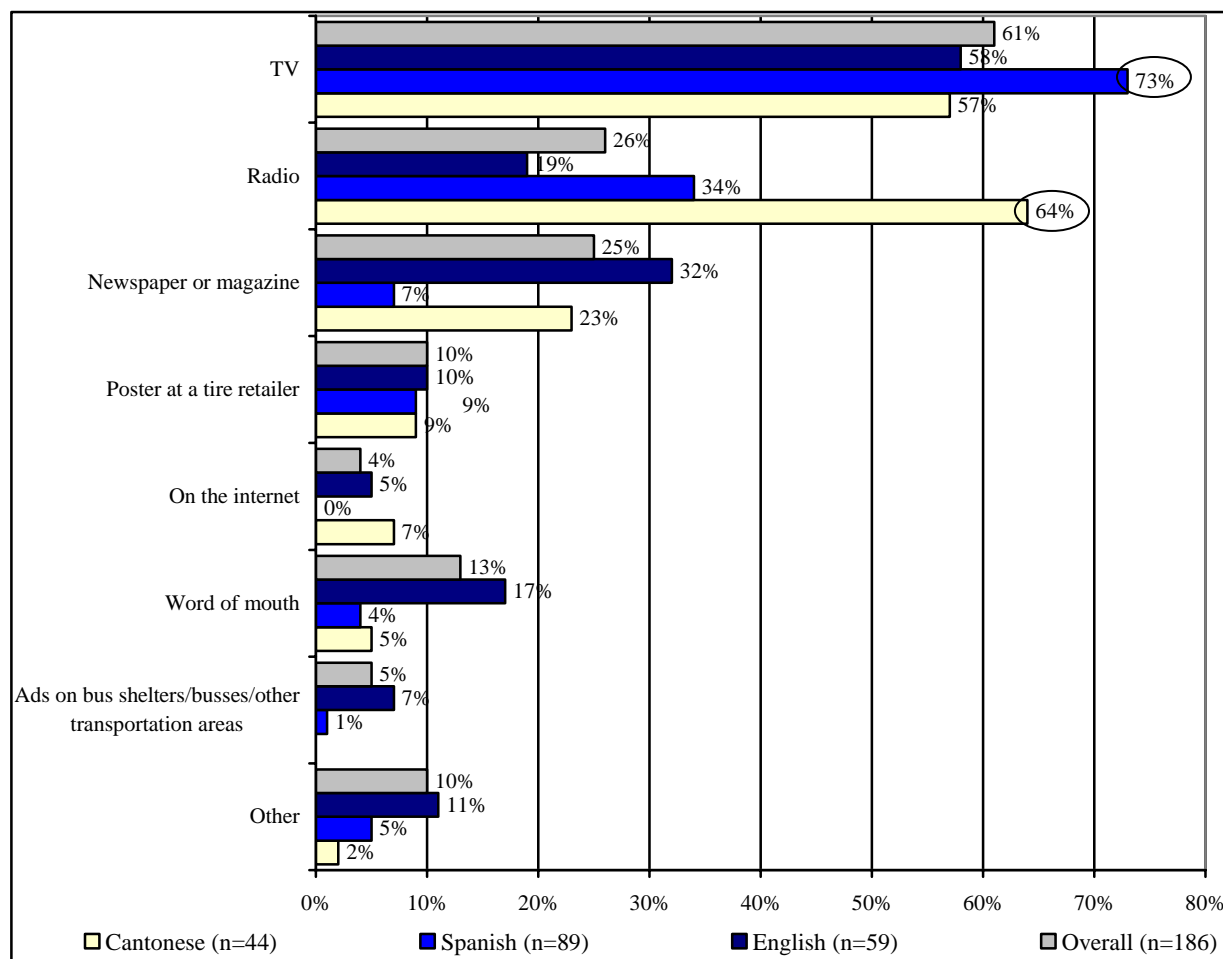
\*Statistically significant differences at the 95% confidence level are circled. Figure based on Q9: “In the past year, do you recall seeing or hearing any advertising, public information or news stories about how to take care of your tires, what you should look for when buying new tires, or how to dispose of your old tires?” Base excludes respondents who answered “don’t know/refused.”

**When asked where they had seen or heard the information, 61 percent of all respondents cited television, followed by 26 percent who recalled radio programming or advertisements, as seen in Figure 19.** Cantonese-speaking respondents were more likely than other groups to report seeing or hearing information over the radio, and Spanish-speaking respondents were more likely to report that they saw the information on television.<sup>3</sup>

**Among those respondents who remembered a specific message, most cited tire inflation, followed by safety and proper tire disposal practices.** For a complete list of open-ended responses for this question, see **Appendix B**.

<sup>3</sup> It should be noted that while respondents were most likely to report that they saw the material on television, no television PSAs were placed as part of the campaign. Residents often assume that any information they recall must have come to them via television.

**Figure 19: Where Saw or Heard Advertisement, Public Information, or News Stories on Tire Maintenance or Disposal, Respondents Overall and by Language, 2008**



\*Significant differences at the 90% level are circled. Chart based on Q10: "Where did you see or hear that information?" Base includes respondents who reported seeing or hearing advertising, public information, or news stories. Base excludes respondents who answered "don't know/refused."

**California residents who were exposed to public service announcements or news stories regarding tire maintenance and disposal were statistically more likely to report that they check their tire inflation on a regular basis, as seen in Table 5.** A total of 63 percent of respondents who received the information reported that they checked the inflation on their tires at least once a month, compared to 53 percent among those who reported that they did not recall seeing or hearing any advertisements or stories.

**Table 5: Proportion of Respondents Who Check Tire Inflation Regularly by Exposure to Public Service Announcements or News Stories  
Respondents Overall, 2008**

Behavior	Recall Seeing or Hearing Ads/Stories	
	Yes (n=186)	No (n=149)
Check Tire Inflation at Least Once a Month	63%	53%

\*Statistically significant differences at the 95% confidence level are shaded. \* Figure based on Q9: "In the past year, do you recall seeing or hearing any advertising, public information or news stories about how to take care of your tires, what you should look for when buying new tires, or how to dispose of your old tires?" and Q12: "How often do you check the inflation on your tires or have someone else do it?" Base includes all respondents who purchased tires. Base excludes respondents who answered "don't know/refused."

## CONCLUSIONS AND RECOMMENDATIONS

Study findings suggest that the Tire Sustainability Campaign has been effective in changing tire maintenance behavior among California residents. In 2008, a greater proportion of California residents reported checking their tire inflation regularly compared to 2006, and significant gains were made among Cantonese-speaking residents with regard to tire rotation practices. Outreach through tire retailers has proven particularly effective in reaching English-speaking residents. There was a statistically significant increase in the proportion of residents overall who reported receiving information on tire maintenance from their tire retailer and those who received the information were statistically more likely to check their tire inflation regularly. Residents exposed to public service announcements or news stories regarding tire maintenance and disposal were also more likely to report that they check their tire inflation on a regular basis.

The overall change in tire-inflation practices was driven by increased compliance among English- and, to a greater extent, Cantonese-speaking respondents. There was no change in behavior among Spanish-speaking residents, which is likely due to their already high compliance levels in 2006. Spanish-speaking residents continue to be more likely to check their tire inflation regularly compared to all other groups and it remains challenging to convert the last quartile of residents who have resisted earlier efforts to change their behavior.

While California residents continue to recognize the significant risks waste tires pose to the environment, concerns over fuel efficiency are quickly becoming a priority for most residents, second only to passenger safety.

Based on these findings, we recommend the following strategies to continue to increase proper tire maintenance practices.

**Recommendation 1: Continue to build on the success of the tire retailer program by expanding the proportion of materials available in Spanish and Cantonese.** Although some of the information distributed through tire retailers was available in Spanish and Chinese, English-speaking respondents were more likely to report that they had received such information. Among English-speaking respondents who had purchased tires, 69 percent had received tire maintenance materials from the retailer at the point of purchase, a gain of 12-percentage points since 2006. In contrast, there were no statistically significant gains among Spanish-speaking and Cantonese-speaking respondents.

**Recommendation 2: Continue to expand the distribution of tire maintenance information to mechanics and dealerships in addition to tire retailers.** Almost one-third of residents surveyed reported that they had not made a tire purchase in the last two years. Moreover, English-speaking respondents were more likely than non-English speaking respondents (Spanish and Cantonese combined) to report that they had *never* purchased tires for their car, van, or truck. Given the success of the tire retailer program, these findings point to the possible value of expanding outreach at other venues. Although the campaign included outreach through mechanics and dealerships, these efforts were limited.

**Recommendation 3: Continue to emphasize safety and the economic benefits of proper tire maintenance, particularly improved gas mileage, in general outreach materials.** Residents continue to rate tire safety as their number one priority and fuel economy is becoming increasingly important for most residents. Nevertheless, when asked to name all benefits of proper tire maintenance, only 57 percent of residents surveyed identified safety and 39 percent identified fuel economy as a benefit.

**Recommendation 4: In expanding outreach to Spanish-speaking residents, focus on the safety benefits of proper tire maintenance.** When asked why they do not inflate or rotate their tires on a regular basis, Spanish-speaking respondents were most likely to report that they lacked the time or had no need to do so, implying that they are not sufficiently motivated to change their behavior. Spanish-speaking respondents consistently rate passenger safety as “very important” and yet there has been no statistical change in the proportion of Spanish-speaking respondents who identified safety as a benefit of tire maintenance. This finding suggests that Spanish-speaking residents (along with California residents as a whole) are not making the connection between tire maintenance and improved safety for themselves and their families.

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## **APPENDIX A: SURVEY INSTRUMENT WITH OVERALL FREQUENCIES**

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**California Integrated Waste Management Board (CIWMB): Tire Sustainability Program  
2008 Residential Survey San Francisco/Fresno Counties  
Total Frequencies Weighted**

Introduction

Hello, my name is \_\_\_\_\_. I am calling on behalf of the California Integrated Waste Management Board. I am conducting a survey of California residents and would like to ask you a few questions about tire safety and maintenance. We are not trying to sell you anything.

- 01 willing to continue
- 02 refusal
- 03 call back <at specific time>
- 04 call back <no specific time>
- 05 no answer
- 06 busy
- 07 answering machine
- 08 disconnected number
- 09 language barrier (not Spanish or Cantonese)
- 10 language barrier (Spanish)
- 11 business number
- 13 fax machine
- 22 language barrier (Cantonese)

Screener Questions

1. Are you 18 or older? (n=602)

- 1 Yes 100%
- 2 No (Go to 1a)

1 a. Is there someone who is over the age of 18 living in your home and who is available to talk now?

- 1 Yes (Go back to introduction with new respondent)
- 2 No (If an adult who lives here is not currently present, enter yes to go back to introduction and arrange a call-back)

2. Do you currently own or lease a car, van or truck? (n=602)

- 1 Yes 100%
- 2 (No) Terminate: I'm sorry but we can only interview people who drive a car, van or truck. Thank you for your time.

3. Do you drive your car, van, or truck at least three times a week? (n=602)

- 1 Yes 100%
- 2 (No) Terminate: Thank you for your time.

---

### Awareness of Proper Tire Safety, Maintenance, and Disposal

4. What practices are you aware of that can increase the life of your tires? (Don't read. Check all that apply. Record first mention. Probe, "anything else?") (n=511)

- 1 Check tire inflation 79%
- 2 Rotate and balance tires 54%
- 3 Maintain alignment 18%
- 4 Other (specify) 29%
- 9 Don't know/refused 15% of those asked the question (n=602)

5. Before this survey, were you aware that the following practices can help your tires last longer? (1= yes; 2=no; 9=don't know/refused)

- 1 Proper inflation (Skip if answer to Q4 = 1) 81% (n=196)
- 2 Rotating and balancing your tires (Skip answer to Q4 = 2) 86% (n=322)
- 3 Maintaining the car's alignment (Skip if answer to Q4 = 3) 88% (n=501)

6. What are the benefits of properly maintaining your tires? (Don't read. Check all that apply, record first mention. Probe: "anything else?") (n=595)

- 1 safety (reduces blow-outs) 57%
- 2 fuel economy 39%
- 3 tires last longer/saves money on new tire purchases 61%
- 4 good for the environment 5%
- 5 Other (specify) 14%
- 9 Don't know/refused 6% of those asked the question (n=602)

7. Using a scale of 1 to 5, where 1 is "not at all important" and 5 is "very important," please tell me how important each of the following is to you: (Rotate stems)

	Not at all important 1	2	3	4	Very Important 5
Tire Safety (n=597)	-	0%	3%	8%	88%
Fuel Economy (n=599)	-	1%	5%	16%	78%
Long-lasting tires (n=597)	-	1%	8%	17%	74%
Environment (n=587)	2%	3%	9%	17%	68%

8. In your opinion, how much of a risk do discarded tires pose to the environment or to public health on a scale of 1 to 5, where 1 is "no risk" and 5 is a "significant risk?" (If necessary: "By discarded tires we mean old tires that are no longer being used and have not been disposed of properly") (9=don't know/refused) (n=564)

No risk 1	2	3	4	Significant risk 5
2%	4%	14%	21%	60%

---

### Market Penetration of Ads/Outreach

9. In the last year, do you recall seeing or hearing any advertising, public information or news stories about how to take care of your tires, what you should look for when buying new tires, or how to dispose of your old tires? (n=595)

- 1 Yes 31%
- 2 No (SKIP TO Q12) 69%
- 9 Don't know (SKIP TO Q12) 1% of those asked the question (n=602)

10. Where did you see or hear that information? (DO NOT READ OPTIONS. MULTIPLE RESPONSES OK. RECORD FIRST MENTION). Probe: Where else? (n=186)

- 1 TV 61%
- 2 Radio 26%
- 3 Newspaper or magazine 25%
- 4 Information booth at a fair or event -%
- 5 Ads on bus shelters/busses or other transportation areas 5%
- 6 Poster at tire retailer/mechanic/other business 10%
- 7 On the Internet 4%
- 8 Other (specify) 23%
- 9 Don't know/refused

11. Briefly tell me what you remember about the ads?

### Behavior: Tire Maintenance, Purchase, and Disposal

12. How often do you check the inflation on your tires or have someone else do it? (READ OPTIONS, check one) (n=585)

- 1 Not at all 3%
- 2 Once a year 7%
- 3 Several times a year 34%
- 4 Once a month (SKIP TO Q14) 34%
- 5 Once a week or more (SKIP TO Q14) 22%
- 9 (DON'T READ) Don't know/refused (SKIP TO Q14) 3% of those asked the question (n=602)

13. What are some of the reasons you do not check the inflation on your tires more often? (Do not read, check all that apply, record first mention. Probe: "anything else?") (n=253)

- 1 I don't have time/takes too long 32%
- 2 I don't know how to do it/don't have equipment 20%
- 3 No need 28%
- 4 I don't think it's that important/it's not a priority 11%
- 5 My mechanic takes care of that when I service my car 17%
- 6 Other (specify) 35%
- 9 Don't know/refused 1% of those asked the question (n=257)

---

**Ask 13a and 13b of everyone, except respondents who said they never check the inflation (Q12=1)**

13a. Where do you usually go to check the inflation on your tires? (READ OPTIONS, check one. ROTATE STEMS) (n=587)

- 1 Gas station 32%
- 2 Auto repair shop or mechanic 15%
- 3 Car dealer 8%
- 4 Tire retailer/tire shop 7%
- 5 A home or private residence 36%
- 6 Other (don't read) specify 1%
- 9 (DON'T READ) Don't know/refused 1% of those asked the question (n=587)

13b. Where do you usually go to put air in your tires? (READ OPTIONS, check one. ROTATE STEMS) (n=587)

- 1 Gas station 53%
- 2 Auto repair shop or mechanic 4%
- 3 Car dealer 7%
- 4 Tire retailer/tire shop 7%
- 5 A home or private residence 21%
- 6 Other (don't read) specify 0%
- 9 (DON'T READ) Don't know/refused 2% of those asked the question

14. How often do have your tires rotated? (do not read) (n=602)

- 1 specify miles mean = 10,240; median = 5,326 (SKIP TO Q16 IF ANSWER 8,000 MILES OR LESS)
- 2 specify months mean = 7.98; median = 6.0 (SKIP TO Q16 IF ANSWER IS 12 MONTHS OR LESS)
- 3 I don't have my tires rotated and balanced 13% (n=602)
- 9 Don't know/refused 15% (n=602)

15. What are some of the reasons you do not rotate your tires more often? (Do not read, record first mention, check all that apply. Probe: "anything else?") (n=205)

- 1 I don't have time/takes too long 23%
- 2 I don't know how to do it 21%
- 3 No need 29%
- 4 I don't think it's that important/it's not a priority 15%
- 5 My mechanic takes care of that when I service my car 12%
- 6 I only do it if there is a problem 11%
- 7 Other (specify) 26%
- 9 Don't know/refused 11% of those asked the question (n=230)

16. Did you purchase tires for your car, truck, or van in the: (READ OPTIONS) (n=593)

- 1 Last month 9%
- 2 In the last year 41%
- 3 More than a year ago but less than 2 years 19%
- 4 More than 2 years ago 18%
- 5 Never (skip to Q18) 13%
- 9 (DON'T READ) Refused/Don't Know (skip to Q18) 1% of those asked the question (n=602)

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17. When you last bought tires, did the retailer provide you with information about tire maintenance?  
(n=446)

- 1 Yes 58%
- 2 No 42%
- 9 Don't Know/Refused 13% of those asked question (n=513)

### Demographics

Now I'd like to ask you a few general questions for research purposes. Your answers are confidential.

18. How many vehicles does your household currently own or lease? mean = 2.03

19. What year were you born? \_\_\_\_\_ mean = 48.99 years of age

20. What is the highest level of school completed by anyone living in your household? (DON'T READ)  
(n=588)

- 1 Grades 1-8 6%
- 2 Grades 9-11 5%
- 3 High School Graduate/ GED 19%
- 4 Some College/Vocational Training 13%
- 5 College Graduate 38%
- 6 Post Graduate/Professional School 20%
- 9 Refused 2% of those asked the question (n=602)

21. Would you please tell me what ethnic group you identify with? Are you Hispanic/Latino, Black/African American, Asian, Caucasian, or of some other ethnic or racial background?  
(n=575)

- 1 Hispanic/Latino 29%
- 2 Black/African American 2%
- 3 Asian 22%
- 4 Caucasian 45%
- 5 Other (Specify) 2%
- 9 Refused (DON'T READ) 5% of those asked the question (n=602)

22. I am going to read some categories of household income. Please stop me when I reach the category of your total 2005 annual household income, before taxes: (n=459)

- 1 Less than \$20,000 14%
- 2 More than \$20,000 but less than \$35,000 19%
- 3 More than \$35,000 but less than \$50,000 13%
- 4 More than \$50,000 but less than \$75,000 19%
- 5 More than \$75,000 but less than \$100,000 11%
- 6 More than \$100,000 but less than \$150,000 11%
- 7 More than \$150,000 but less than \$200,000 4%
- 8 Over \$200,000 8%
- 9 Refused (DON'T READ) 24% of those asked the question (n=602)

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23. (GENDER BY OBSERVATION-- DON'T READ) (n=602)

- 1 male 50%
- 2 Female 50%

24. Note Language (English, Spanish, Chinese)

**That concludes our survey. Thank you very much for your time.**

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## **APPENDIX B: OPEN-ENDED RESPONSES TO Q11**

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**11. Briefly tell me what you remember about the ads? (Open-ended responses)**

1. After a certain number of miles you have to rotate the tires.
2. You NEED TO BE MORE CAREFUL AND CHECK MORE CAREFULLY.
3. To not throw the tires just anywhere because it is bad for the environment. It is good to recycle them.
4. Not much
5. JUST THAT IT WAS IN THE NEWSPAPER.
6. THEY WERE TALKING ABOUT DISPOSING OLD TIRES AND HOW TO PROPERLY DISPOSE OF THE TIRES THE CITY DUMP WILL TAKE THEM BUT WILL CHARGE YOU.
7. It talked about the proper air pressure making them last longer.
8. NOT MUCH. THEY SAID YOU GET BETTER GAS MILEAGE IF YOU KEEP THE PRESSURE OF YOUR TIRES AT THE RIGHT NUMBER.
9. Just general tire stuff.
10. THEY SAID YOU SHOULD CHECK THE AIR PRESSURE REGULARLY.
11. Where to take them to discard them.
12. The air pressure should be checked weekly.
13. Safety, checking tire pressure, and rotation tips.
14. TIRE SAFETY TIPS
15. TIRE INFLATION AND ROTATION INSTRUCTIONS.
16. Sales, and mostly proper inflation.
17. How often to rotate your tires.
18. KEEP THEM FULL OF AIR AND YOU SAVE GASOLINE.
19. KEEP THEM WITH CORRECT AIR PRESSURE.
20. THAT THEY CHARGE PEOPLE TO DISPOSE OF THE TIRES AND WE SHOULD TAKE THEM TO THE CORRECT PLACES.
21. IF YOU TRAVEL LONG DISTANCES OR NOT YOU SHOULD CHECK YOUR TIRES REGULARLY.
22. Measure the air pressure, it shouldn't be too high or too low.
23. KEEP THE TIRES ALIGNED.
24. To recycle the tires.
25. THAT IT IS GOOD TO KEEP YOUR TIRES ROTATED AND AT THE RIGHT PRESSURE.
26. THEY SHOULD BE AT THE PROPER AIR PRESSURE.
27. THAT YOU SHOULD BE CHECKING THE AIR PRESSURE REGULARLY AND THEY WILL LAST LONGER AND YOU CAN PREVENT AN ACCIDENT.
28. THAT ONE SHOULD TAKE CARE OF HIS OR HER TIRES.
29. THAT A TIRE WITH LOW PRESSURE CAN BE DANGEROUS.
30. THAT I SHOULD BE CAREFUL WITH MY TIRES AND THAT THERE IS A PROPER PLACE TO DISPOSE OF THEM.
31. THEY GAVE INSTRUCTIONS FOR CARE AND MAINTENANCE OF THE TIRES.
32. THEY ADVISED THAT IF YOU PLAN TO TRAVEL CHECK THE AIR PRESSURE OF YOUR TIRES SO THAT THEY FUNCTION ADEQUATELY BEFORE LEAVING.
33. DISPOSE OF THEM IN THE PROPER WAY.
34. TIRE MAINTENANCE TIPS.
35. THAT WE HAVE TO MAINTAIN THE TIRES WITH THE RIGHT PRESSURE AND OFTEN AND THAT IT IS BETTER FOR THE ENVIRONMENT.
36. THAT IF THEY ARE NOT MAINTAINED PROPERLY YOU CAN CAUSE ACCIDENTS.
37. TIRE MAINTENANCE TIPS
38. THAT THE PRESSURE SHOULD BE CHECKED WEEKLY.
39. THAT YOU SHOULD NOT DUMP THEM BECAUSE IT'S BAD FOR THE ENVIRONMENT, THEY SHOULD BE RECYCLED.
40. THAT IF YOU THROW THEM OR BURN THEM THEY HARM THE ENVIRONMENT THEY HAVE TO BE TAKEN TO A PLACE WHERE THEY RECYCLE THEM.
41. CHECK YOUR TIRES ONCE A WEEK.
42. PROPER TIRE DISPOSAL.
43. That if it's rainy season you should keep your tires with the right pressure.
44. That you should not be careless about your tires, keep them in good condition.
45. Keep tires properly inflated.

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46. TIRE SAFETY
  47. WHEN TO REPLACE THEM.
  48. VERY IMPORTANT SAFETY TIPS.
  49. NOT TO DISCARD TIRES IN DUMP AT RANDOM THEY SHOULD BE IN A RECYCLED SYSTEM.
  50. GENERAL TIRE STUFF.
  51. THEY JUST TOLD ME SOMETHING ABOUT IT.
  52. How to take care of your tires.
  53. You are supposed to maintain your tires with the proper air pressure.
  54. There is one with a lady throwing a tire through the window.
  55. TIRE SAFETY
  56. INFLATE PROPERLY AND CHECK TIRES REGULARLY.
  57. Telling us how to prolong tire life.
  58. Should be disposed of properly, places around town where we can dispose of tires.
  59. THE ADVERTISEMENT HAD PICTURES AND WERE ONLY ONE PAGE LONG.
  60. GENERAL INFO ON SAFETY AND CONSERVING FUEL AND ENERGY.
  61. RACING CHANNELS HOW THE TIRES ARE CONSTRUCTED AND THE IMPORTANCE OF BALANCING YOUR TIRES.
  62. IN CAR MAGAZINES THEY EVALUATED DIFFERENT TYPES OF TIRES, PROPER INFLATION TREAD DEPTH, BUT I DON'T REMEMBER THEM SAYING ANYTHING ABOUT RECYCLING.
  63. THE SPECIFIC TIME AND DATE TO DROP OFF OLD TIRES.
  64. HOW TO MAINTAIN YOUR TIRES.
  65. NOT MUCH.
  66. CHECK TIRE INFLATION.
  67. How to save gas, how to maintain tires.
  68. How to maintain them.
  69. CHECK THE AIR PRESSURE REGULARLY.
  70. CHECK AIR REGULARLY.
  71. HOW OFTEN TO CHECK TIRES.
  72. HOW TO FILL THEM WITH AIR AND HOW OFTEN TO ROTATE THEM.
  73. HOW TO CHECK TIRE INFLATION.
  74. HOW TO CHECK TIRE INFLATION AND HOW OFTEN TO ROTATE.
  75. HOW TO MAINTAIN USED TIRES.
  76. Told me which tire is cheaper.
  77. How to balance, check pressure, and remove any stones that get between the treads.
  78. Tire maintenance.
  79. I JUST REMEMBER THAT IT WAS A BIG ADVERTISEMENT.
  80. Change oil more frequently.
  81. TIRE MAINTENANCE TIPS.
  82. REMEMBER TO CHECK AIR PRESSURE.
  83. HOW TO MAINTAIN PROPERLY.
  84. THAT YOU SHOULD NOT LET THEM ACCUMULATE WATER IF THEY ARE NOT IN USE.
  85. That you should take care of your tires so that you can prevent accidents.
  86. JUST THAT IT IS IMPORTANT FOR THE ENVIRONMENT FOR YOU TO USE TIRES PROPERLY.
  87. THAT IN THE SCHOOL ONCE OR TWICE A YEAR SOME TIRES CAN BE DISPOSED.
  88. THAT THEY GET COLLECTED SO THAT THEY WON'T BE THROWN EVERYWHERE.
  89. HOW TO MAINTAIN YOUR TIRES AND A WEBSITE WHERE YOU CAN GET MORE INFORMATION.
  90. To recycle tires in the city that I live in.
  91. TIRE SAFETY
  92. They said how often to rotate the tires and how long they should last.
  93. THAT IT IS SAFER WHEN YOU DRIVE ON THE STREET WITH GOOD TIRES.
  94. TO KEEP ENOUGH AIR IN THE TIRES.
  95. TO KEEP PROPER AIR PRESSURE.
  96. THAT IT'S SAFER TO HAVE WELL MAINTAINED TIRES.
  97. THAT WE HAVE TO KEEP OUR CARS IN GOOD CONDITION.
  98. THAT THE ROAD IS SAFER.
  99. THAT YOU SHOULD CHECK THE AIR PRESSURE REGULARLY AND SEE IF IT IS GOOD.

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100. YOU SHOULD GET YOUR TIRES ALIGNED AND PLACES TO GO WHERE THEY LAST LONGER.  
101. THAT YOU SHOULD TAKE CARE OF THE TIRES ON YOUR CAR BECAUSE IT'S SAFER AND YOU SAVE ON GAS.  
102. HOW TO CHECK TIRES.  
103. THAT IF YOU MAINTAIN PROPER AIR PRESSURE YOU GET MORE MILEAGE.  
104. That they are very cheap at Wal-Mart.  
105. REFUSED  
106. THAT THERE ARE DEFECTIVE TIRES.  
107. THAT TIRES AND ENGINE OIL SHOULD BE DISPOSED OF PROPERLY.  
108. THAT YOU SHOULD CHECK YOUR TIRES PRESSURE.  
109. THERE WAS A TRUCK WITH A BUNCH OF OLD TIRES.  
110. WHERE TO TAKE THE TIRES.  
111. THAT YOU SHOULD CHECK YOUR TIRES BECAUSE THEY MIGHT BE TOO WORN DOWN.  
112. I DON'T RECALL.  
113. THAT THE AIR PRESSURE SHOULD BE NORMAL.  
114. IT WAS ON TELEMUNDO.  
115. IT WAS DURING THE NEWS ON UNIVISION.  
116. JUST THAT IT WAS ON CHANNEL 21.  
117. THAT IF YOU SHOULD CHECK THEM FOR AIR PRESSURE AND AVOID THEM GETTING TOO HOT.  
118. I JUST REMEMBER THAT IT WAS ON CHANNEL 47.  
119. DON'T REMEMBER  
120. DON'T REMEMBER  
121. IT WAS ON CHANNEL 21 IS ALL I REMEMBER.  
122. IT WAS ON CHANNEL 21, AND ALSO ON 100.5 FM.  
123. TELLING ME TO ROTATE TIRES FOR LONGER TREAD LIFE AND TO WATCH THE INFLATION OF THE TIRES.  
124. THINGS THAT I ALREADY KNEW.  
125. How to keep tires properly inflated.  
126. How to maintain your tires.  
127. GENERAL INFORMATION.  
128. Driving tips.  
129. GENERAL INFORMATION.  
130. Sale  
131. GENERAL TIRE SAFETY.  
132. What we need to do to maintain our tires.  
133. It's not good to dump your tires anywhere. Tires can accumulate and take weeks to get picked up and if they are burned they give off harmful gas.  
134. THAT IT'S IMPORTANT TO MAINTAIN TIRES.  
135. TIRE SAFETY AND THEY GAVE AN EXAMPLE OF A FAMILY WHO DROVE WITH A SPARE TIRE THAT WAS OVER 5 YRS OLD.  
136. Just news about tires from different companies.  
137. PROPER INFLATION AND BALANCE.  
138. How to take care of tires.  
139. General tire maintenance.  
140. ROTATING TIRES AND CHANGING SPARES.  
141. Disposal of Tires in waste dumps, burning tires releases toxic fumes.  
142. Just a regular commercial.  
143. Stories about the age of stories.  
144. About keeping the car in good condition.  
145. IT WAS THE ABOUT TIRES.  
146. IT WAS PRINTED IN A MAGAZINE.  
147. They said you get better fuel economy.  
148. HOW TO TAKE CARE OF TIRES.  
149. THEY WERE SAYING WHERE TO GO TO GET YOUR TIRES CHECKED FOR FREE.  
150. RECYCLE TIRES

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151.CHECK TIRE INFLATION  
152.CHECK TIRE INFLATION  
153.CHECK TIRE INFLATION.  
154.CHECK THE TIRES OFTEN, IT'S SAFE AND GOOD FOR THE ENVIRONMENT AND YOU SAVE MONEY.  
155.CHECK TIRE INFLATION AND THEY WILL LAST LONGER.  
156.If you maintain your tires it's good for the environment.  
157.CHECK THE INFLATION.  
158.General tire safety.  
159.KEEPING TIRE IN GOOD CONDITION IS GOOD FOR THE ENVIRONMENT.  
160.CHECK THE INFLATION  
161.CHECK TIRES ONCE A MONTH.  
162.CHECK AIR PRESSURE.  
163.CHECK TIRE INFLATION.  
164.TIRE MAINTENANCE.  
165.KEEP TIRES WITH PROPER AIR PRESSURE BECAUSE IT'S BETTER FOR THE ENVIRONMENT.  
166.TIRE MAINTENANCE.  
167.TIRE MAINTENANCE.  
168.TIRE SAFETY  
169.CHECKING TIRES AND KEEPING THEM WELL MAINTAINED IS GOOD FOR THE ENVIRONMENT.  
170.Tire safety  
171.RECYCLE TIRES  
172.Tire safety  
173.TIRE MAINTENANCE  
174.DON'T RECALL  
175.They give you a 1-800 number that you can call and they tell you how to dispose of tires and other trash.  
176.To not throw your tires in the street.  
177.To check tires for air because it's safer and less gas.  
178.MAINTAINING THE TIRES IS GOOD FOR THE ENVIRONMENT.  
179.MAINTAINING TIRES ADEQUATELY CAN INCREASE FUEL EFFICIENCY.  
180.PROPERLY INFLATED TIRES MAKE A CAR WASTE LESS GASOLINE.  
181.THEY GAVE A NUMBER WHERE YOU CAN CALL TO GET INFORMATION.  
182.THAT TIRES SHOULD BE RECYCLED.  
183.PLACES WHERE TO TAKE YOUR TIRES.  
184.TIRE MAINTENANCE TIPS.  
185.SAVE GASOLINE BY INFLATING YOUR TIRES PROPERLY.  
186.TIRES NEED PROPER AIR PRESSURE.  
187.DO NOT THROW TIRES AWAY, DISPOSE OF THEM PROPERLY.  
188.TIRE SAFETY  
189.TO ROTATE TIRES AND HAVE THE RIGHT AIR PRESSURE.  
190.PROPER AIR PRESSURE TIPS.